

# Railway Age

NOVEMBER 11, 1944

Founded in 1856

## YOUNGSTOWN

### Steel Doors

—the STANDARD for American and Canadian Railroads available in standard or light weight construction and sturdy enough to meet all service conditions.

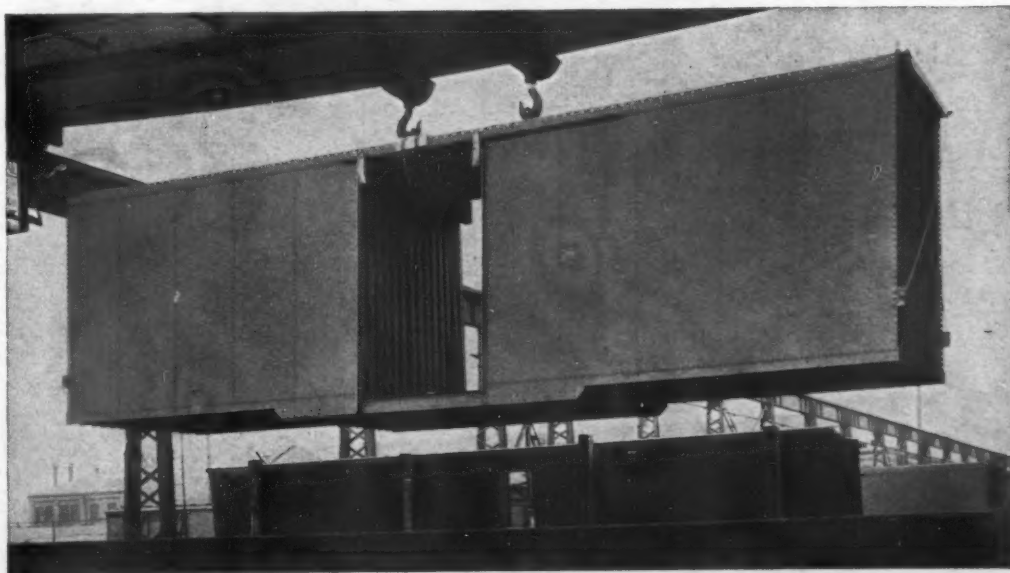


### Steel Sides

The Library of  
Congress  
Serial Record  
NOV 15 1944

Copy.....

—fully fabricated and assembled for easy application to underframes — to assist railroads building or rebuilding in their own shops.



**YOUNGSTOWN STEEL DOOR COMPANY**

Cleveland

Chicago

New York

Youngstown

The Code of Practice of the Association of Manufacturers of Chilled Car Wheels, ensures the railroads of a dependability of product so important where safety, economy and long life are basic factors of operation.

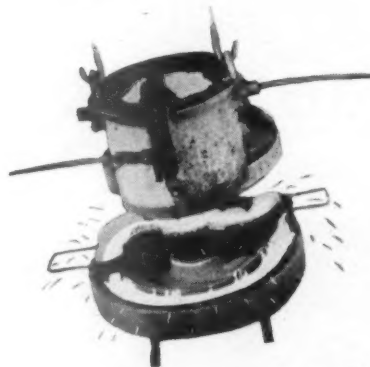
"The 7 Rigid Tests for Chilled Car Wheels" is just another "double check" to guarantee the maintenance of these superior quality standards of Chilled Car Wheels.

## Test No. 5

### THE 7 RIGID TESTS THAT GUARANTEE UNIFORMITY

1. Chill test block taken at least once in every ten wheels poured.
2. One complete chemical analysis with each heat.
3. Constant pyrometer checks for accurate processing temperature.
4. Drop test of finished wheel (A.A.R. Specifications).
5. Thermal test of finished wheel (A.A.R. Specifications).
6. Test for Rotundity.
7. Brinell Hardness test for maximum and minimum chill limits.

**The Thermal Test**  
The object of the Thermal Test is to demonstrate the ability of the wheel to withstand temperature stresses encountered in service due to brake application.



Method of making Thermal Test



One of the great outstanding performances of the war has been the contribution of the Railroads of America.



ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS  
230 PARK AVENUE, NEW YORK, N. Y. • 445 NORTH SACRAMENTO BOULEVARD, CHICAGO, ILL.  
Organized to achieve: Uniform specifications — Uniform inspection — Uniform product





EELS

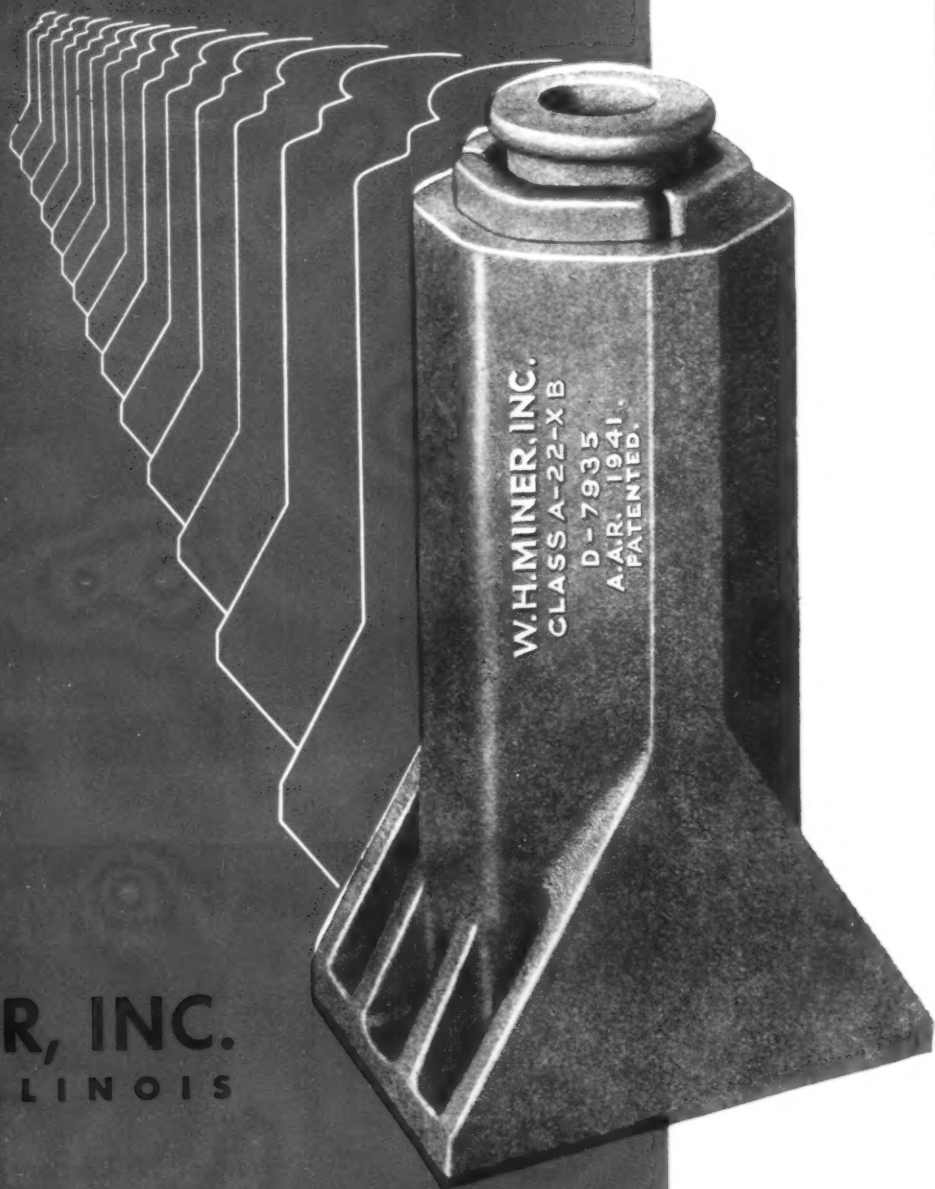
SA 3092

3894

EELS  
GO, ILL.  
product

January 4, 1913  
Single copy...  
RAILWAY AC

# LASTING QUALITY

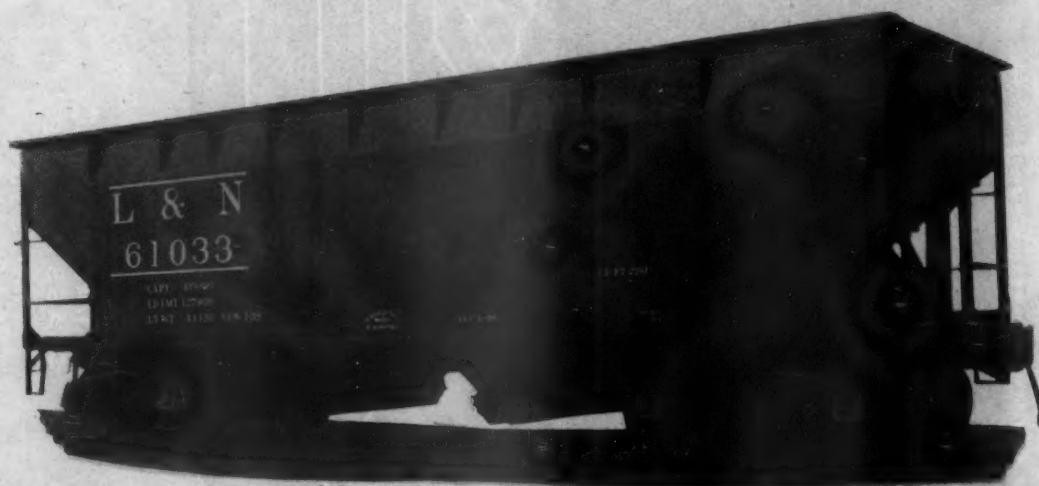


MINER  
FRICTION DRAFT GEAR  
CLASS A-22-XB

W. H. MINER, INC.  
CHICAGO • ILLINOIS



# MT. VERNON



## MT. VERNON CARM

MT. VERNON, ILLINOIS



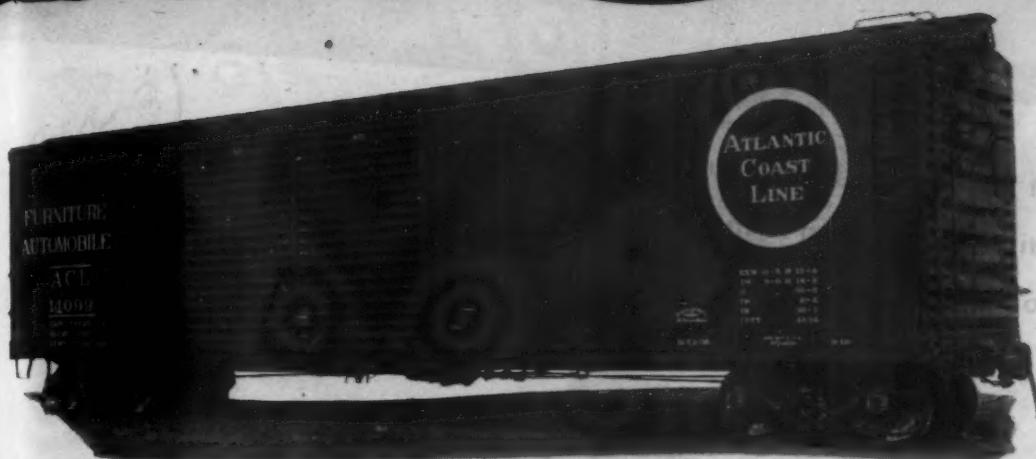
Div. of H. K. PORTER CO.

General Offices: PITTSBURGH, PA.

Factories: Mt. Vernon, Ill. • Pittsburgh, Pa. • Blairsville, Pa.

# CARS

Pay off in longer life, increased  
revenue miles and less maintenance



**RMFG. CO.**

**IRON COMPANY, Inc.**

**32 PENNSYLVANIA**

**Pat. & Reg. U.S. • Newark, N.J. • New Brunswick, N.J.**

**MT. VERNON CAR DIVISION:**  
Complete Line of Freight Cars

**LOCOMOTIVE DIVISION:**  
Diesel, Diesel-Electric, Electric, Steam,  
and Fireless Steam Locomotives.

**PROCESS EQUIPMENT DIVISION:**  
Complete Line of Chemical, Food, and  
Petroleum Refinery Equipment.

**QUIMBY PUMP DIVISION:**  
Screw, Rotex, Centrifugal, Chemical Pumps.

**STEEL CASTING & FORGING DIVISION:**  
Electric Furnace Alloy, Stainless, Heat-  
Treated and Pressure Steel Castings;  
Forgings in all sizes.

# Brake Shoes should be worn

Get full service from your brake shoes. Do not remove them until they are worn to the limit-of-wear mark. To take them off sooner is a waste of material and time.



The limit-of-wear is clearly visible. Be sure to wear to this mark.

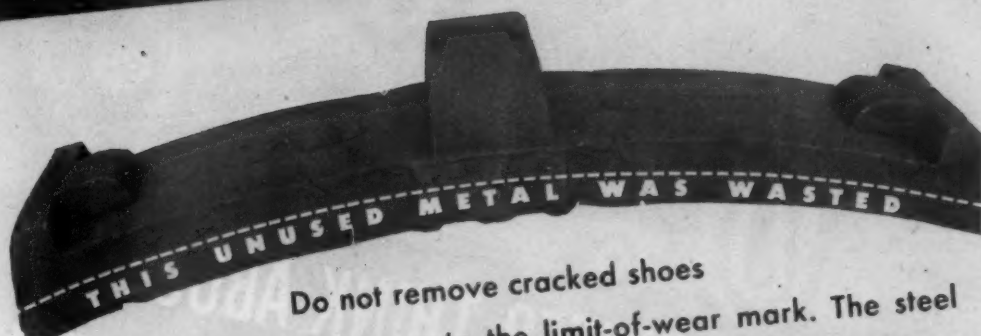


Do not remove partially worn brake shoes. This shoe has many miles of service that are being thrown away.

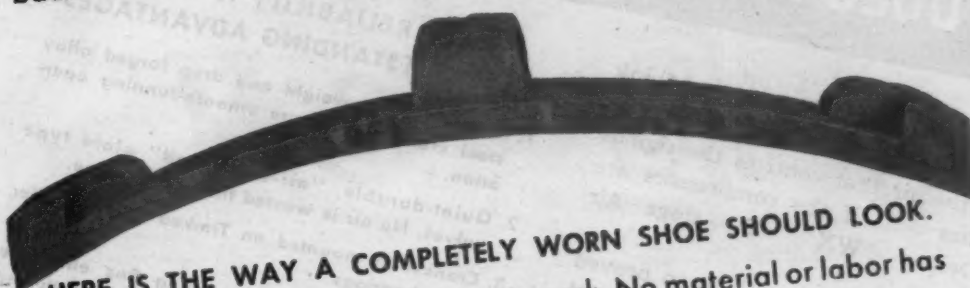
## Wear all Brake Shoes to the



# to the *Limit...*



Do not remove cracked shoes until they have been worn to the limit-of-wear mark. The steel back holds the wearable metal in its place for full-wear duty.



HERE IS THE WAY A COMPLETELY WORN SHOE SHOULD LOOK. It has been worn to the limit-of-wear mark. No material or labor has been wasted.

Watch your brake shoe scrap pile for partially worn brake shoes. If you find any, return them to service. Instruct all concerned to avoid this wastage.

AMERICAN

## Brake Shoe

COMPANY

BRAKE SHOE AND CASTINGS DIVISION

230 Park Avenue, New York 17, N. Y.

# *Limit-of-Wear* mark

3783



# WHAT DOES AN ENGINEER THINK ABOUT?

**P**LENTY! But one thing he need not think about. That's the air supply for the brakes, or the air that controls the signals and switches . . . if the compressors are Gardner-Denver "WX" Two-stage Air Cooled!

For these compressors have been proved dependable in millions of miles of exceptional performance in Diesel-Electric locomotives . . . in faithful performance in signal service, yards, shops and power plants. Railroad men know and rely on Gardner-Denver compressors for rugged, unfaltering service.

## "WX" RELIABILITY IS DUE TO THESE OUTSTANDING ADVANTAGES:

1. Integral counterweight and drop forged alloy steel crankshaft assure smooth-running operation.
2. Quiet-durable, "air-cushioned" plate type valves. No air is wasted through leakage.
3. Crankshaft mounted on Timken tapered roller main bearings.
4. Heavy circumferential cooling fins eliminate cylinder distortion—provide extra strength and cooling surface.

For complete information and specifications on Gardner-Denver "WX" Type Compressors, write Gardner-Denver Company, Quincy, Illinois.

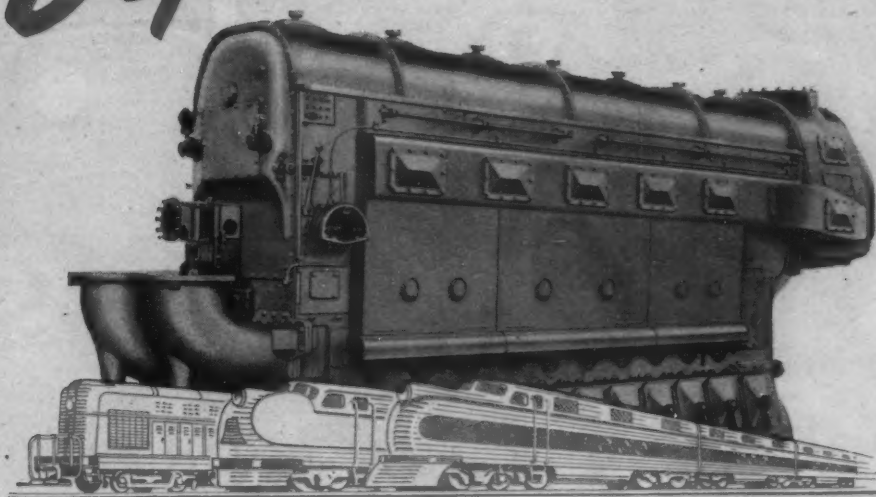
**GARDNER-DENVER**  
Since 1859



Gardner-Denver "WXE" Two-Stage Air-cooled Compressor.

# Tops in Locomotive Diesel

# Dependability



**T**HE U. S. Navy has used Fairbanks-Morse Opposed-Piston Diesels for five years... rates them so high in dependability that more than two million horsepower are now in Navy service.

their proved dependability to Fairbanks-Morse Locomotives... assure high availability on the heaviest assignments.

These same Diesels now bring

Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

BUY MORE WAR BONDS  
 of Seaward. This severe winter operational prob-  
 lem has been eliminated by the Whittier-Portage

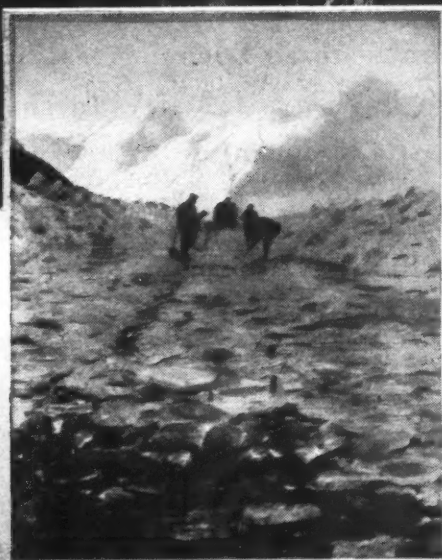
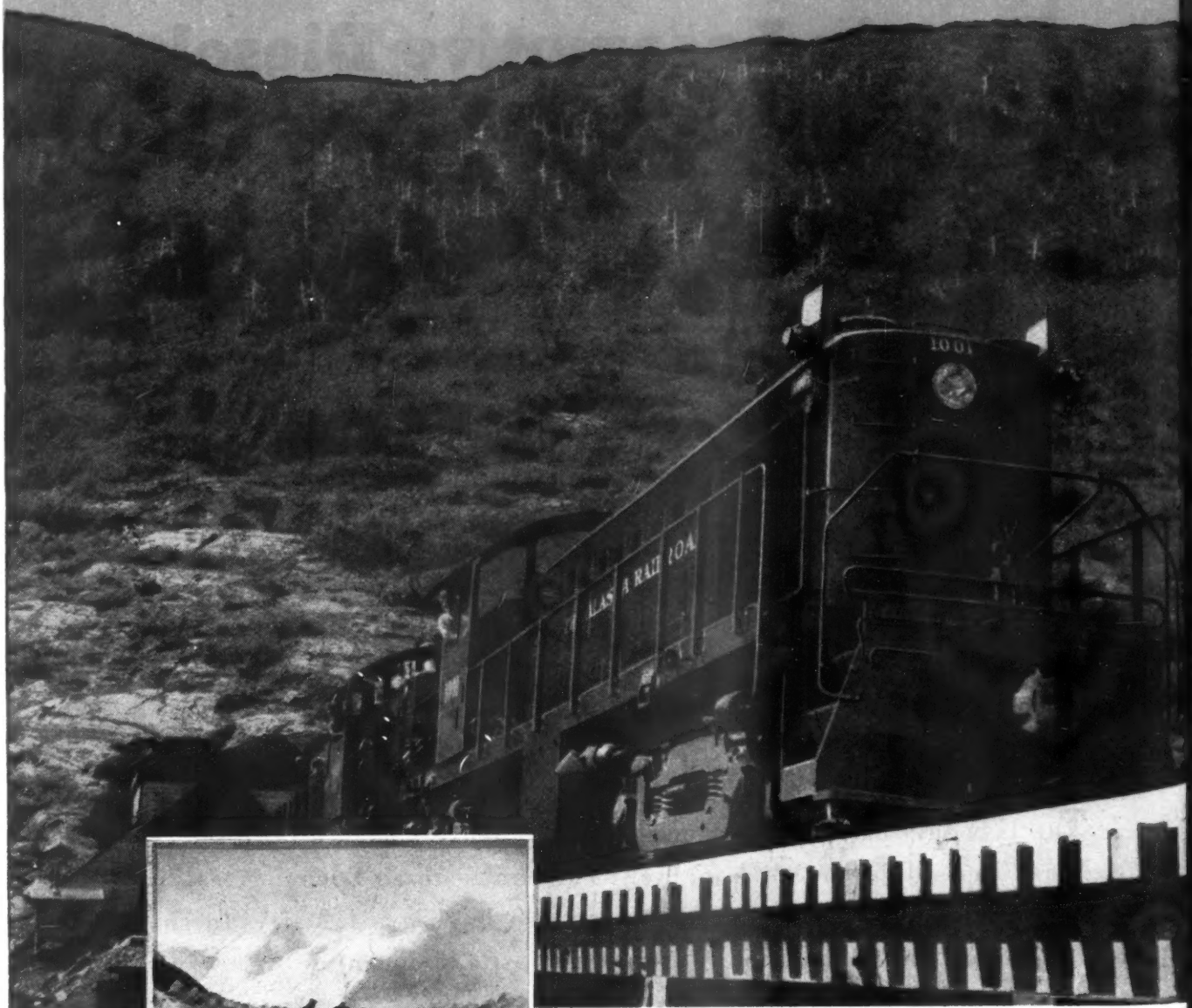
*A name worth remembering!*



# FAIRBANKS-MORSE



# \$300,000 INVESTMENT



Ice-covered rails on the Alaska Railroad north of Seward. This severe winter operational problem has been eliminated by the Whittier-Portage cut-off, over which two Alco-G.E. diesel-electrics are speeding vital army supplies.

*Alco*



## AMERICAN LOCOMOTIVE

# **SAVED** *and train loads doubled by 2 Alco-G.E. diesel-electrics in Alaska*

**"In addition to their safe tunnel operation and lower operating cost, the Alco-G.E. diesel-electrics are making the Whittier-to-Anchorage runs without stopping for water and firebox cleaning, which was necessary when steam locomotives were used."**

**COL. OTTO F. OHLSON**, General Manager  
Alaska Railroad



Col. Otto F. Ohlson, under whose management the Alaska Railroad became self-supporting in 1938. Last year it returned an operating profit of \$4,501,264 on its \$75,000,000 investment.

**W**HEN the Alaska Railroad blasted its tunnel route through the Chungach Mountains, it cut 50 miles from the Whittier-to-Anchorage run, and saved \$300,000 by selecting Alco-G.E. diesel-electric motive power. In tunnels as long as 13,000 feet, steamers would have required forced ventilation equipment, but the U.S. Bureau of Mines declared diesel-electrics safe for tunnel operation without this expensive equipment.

At nearly passenger-train speeds, these 1000-hp diesel-electrics can haul 50-car trains of supplies and equipment to the army bases in Alaska. Their 800-gallon fuel tanks enable them to make two round trips without servicing, whereas the steamers previously used had to stop for water and firebox cleaning after each trip, and their loads were limited to 25 cars. The diesel-electrics are hauling double the train loads, and are operating at substantially lower cost per ton-mile than did the steamers.

Further reductions in operating expenses

are being made through the elimination of a daily run. The diesel-electrics, available 95 per cent of the time, have higher tractive effort. This permits them to haul combined freight and passenger trains where two separate trains were formerly required. Train-heating facilities on the diesel-electrics assure passenger comfort during the cold Alaska winters.

The Alaska Railroad operation is typical of how the low operating cost of Alco-G.E. diesel-electrics can turn a larger percentage of revenue into net profit. Our engineers will gladly collaborate with your own to determine where the application of our motive power can accomplish such results for you. We build all three types of motive power—diesel-electric, electric, and steam—and therefore can impartially recommend the one which is best suited to your particular operation.

**BUY WAR BONDS**



**and GENERAL ELECTRIC**





# 4 WAYS to Safeguard Your Signal System

Use these J-M Electrical  
Materials for economical  
maintenance over the years!

**1. TRANSITE DUCTS**—Protect cables with these asbestos-cement ducts. Fireproof, rustproof, rotproof and immune to electrolysis, they are available in two types—Transite Conduit for use without protective casing, Transite Korduct for use in concrete duct banks. Either type is easily and quickly installed.

**2. ASBESTOS EBONY**—Install this rugged J-M material for switch bases, bus bar supports, controller plates and other current-carrying parts. An inorganic mineral product, it won't crack, shrink, buckle, rust, or rot and is unaffected by shock, vibration, or rapid temperature changes. Comes in large sheets and in finished panels cut to any size.

**3. TRANSITE ASBESTOS SHEETS**—Use these durable, fire-resistant sheets for arc barriers and other non current-carrying parts... Transite is ideal for this service because of its strength and high resistance to heat and flame.

**4. DUXSEAL**—Seal duct openings with this plastic, non-hardening sealing and caulking compound that *stays put!* Easily applied at any temperature, non-injurious to hands and can be salvaged completely.

● For details on these and other time-tested J-M Electrical Materials write Johns-Manville at New York, Chicago, Cleveland, St. Louis, or San Francisco.



## Johns-Manville

86 YEARS OF SERVICE TO TRANSPORTATION

Insulations

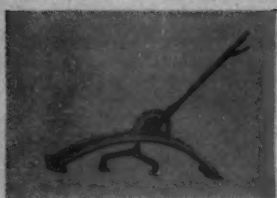
Packings

Friction Materials

Refractory Cement

Building Materials





**TIE NIPPER** — Securely grips, lifts and holds ties for spiking or tamping. Saves 1 man.



**RAIL BENDER** — One man bends up to 151 lb. "T" rail without heating.



**TRACK LINER** — Three men align more rail than 11 men with aligning bars.



**TRACK JACKS** — Sturdy, durable, jacks in many models speed up maintenance jobs.



**MOTOR CAR** — Sturdy, powerful, lightweight section car—1 to 8 man crew—unsurpassed for economical, dependable performance.

## 886 Billion miles

This staggering figure, estimated by I.C.C., represents the total ton miles to be handled by the railroads this year.

Maintaining the right-of-way for such tremendous travel requires the very best in track tools . . . sturdy, efficient, quality track tools built by BUDA will enable track crews to do a better job, quicker and easier. Write or wire for bulletins.

# BUDA

15401 Commercial Ave.

Harvey (Chicago Suburb) Illinois



## **NICKEL ALLOYS AID THE CHEMICAL INDUSTRY to KEEP 'EM PRODUCING!**

*Stainless Steel Lined Polymerization Reactors in Synthetic Rubber Plant*

### *Equipment of Stainless Steel, Nickel and Monel meets many specialized requirements*

Chemical engineers have met America's wartime challenge.

They opened the gates to a mighty flood of products going to war...strategic raw materials, synthetic substitutes, and entirely new substances having advantages all their own.

A factor in this production success is the wide use of stainless steel, Monel, and other corrosion-resistant alloys containing Nickel.

For in the chemical industry corrosion is a large-scale menace.

To wage war on this enemy, chemical engineers enlisted the aid of Nickel, because Nickel imparts to other metals strength and resistance to corrosion and wear. In the chemical field, as in many

others, a little Nickel goes a long way to keep equipment producing.

It prolongs the life of processing apparatus, and protects the purity, color, and uniformity of the product.

Hence, stainless and Nickel alloys are specified widely for acid heaters and caustic coolers, for high-pressure autoclaves and vacuum evaporators, for cracking towers and polymerization reactors, for shipping drums and tank cars, for pumps, piping and storage tanks, for agitators and settlers, for stills and digestors—for every type of equipment that converts laboratory experiments into full-scale chemical operations.

For years we have enjoyed the privilege of cooperating with technical men

of the chemical industry...and of many others. Whatever your industry may be...if you want help in the selection, fabrication, and heat treatment of alloys...we offer you counsel and data.

#### **New Catalog Index**


New Catalog C makes it easy for you to get Nickel literature. It gives you capsule synopses of booklets and bulletins on a wide variety of subjects—from industrial applications to metallurgical data and working instructions. Why not send for your copy of Catalog C today?



★ **Nickel** ★

**THE INTERNATIONAL NICKEL COMPANY, INC., 67 Wall St., New York 5, N. Y.**

# Lighter - Stronger - Better



Since the first  
**Schaefer  
Loop Hanger**  
went into service  
more than 20 years  
ago, there have  
been no adverse  
reports on their  
performance.

*Schaefer Light Weight Design  
Insures More Than Car Life*

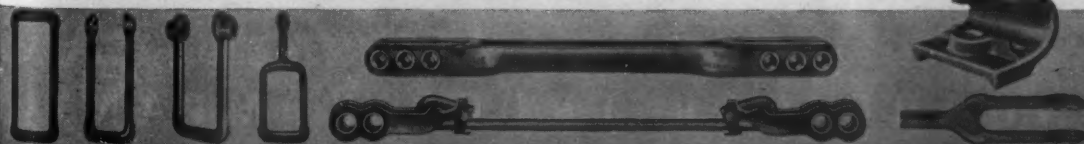
When your freight car repair program  
is under consideration you can be  
certain that Schaefer Service will  
meet your delivery requirements.

STANDARD  
ON MOST  
ROADS

# Schaefer

**EQUIPMENT  
COMPANY**

KOPPERS BUILDING • PITTSBURGH, PA.



LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS... TRUCK, CYLINDER AND FLOATING LEVERS  
TRUCK LEVER CONNECTIONS... BRAKE ROD JAWS... WEAR PLATES... BRAKE SHOE KEYS



# A Train Crew Favorite

## Easy Riding Cabooses

Barber-Bettendorf Swing Motion Trucks are specifically designed for caboose car service. They are the modern, improved answer for smooth riding cabooses at today's increased train speeds.

A few of the reasons why Swing Motion Trucks are utilized by modern railroads:—

- High Speed Design
- Simplified Construction
- Low Cost Maintenance
- Easy Riding
- Relaxingly Satisfied Train Crews

Barber-Bettendorf  
*Swing Motion*  
Trucks



STANDARD CAR TRUCK COMPANY  
332 SOUTH MICHIGAN AVENUE  
CHICAGO 4, ILLINOIS

# Why "NIBBLE" Templates?

## Do ALL

MAKES THEM FASTER  
and SMOOTHER



The Nibbler has no work table. Job must be carefully guided by hand. Finished edges are rough. Much material is reduced to waste chips. Work thickness is limited to thin plate stocks.

The DoALL's thin cutting blade follows layout lines accurately. Edges are smooth and straight. No metal is wasted. DoALL takes work a foot thick, or you can cut 100 or more shapes at one time from stacked sheets.

The DoALL has cut its way through millions of feet of metals, alloys, plastics, laminates, plywood and composition materials that have gone into war production work.

The DoALL laughs at former cutting records by doing internal and external sawing in 1/4 to 1/10 the time of other methods.

If there is one machine tool that deserves your attention now and after the war, it's the DoALL.

*The circular DoALL ADVANTAGES tells a graphic, time-saving story. Send for copy.*



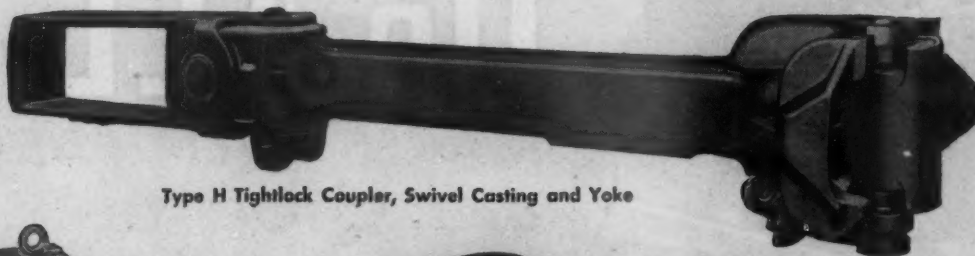
# DoALL

INDUSTRY'S NEW SET OF TOOLS

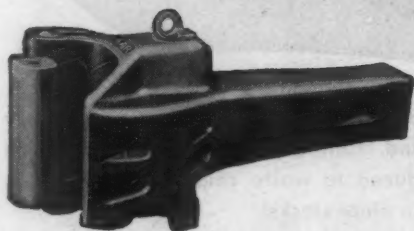
**CONTINENTAL MACHINES, INC.**

1345 So. Washington Avenue • Minneapolis 4, Minn.

# NATIONAL PRODUCTS FOR RAILROAD EQUIPMENT



Type H Tightlock Coupler, Swivel Casting and Yoke



A. A. R. Std. E. Coupler



Naco Spun Steel Car Wheel



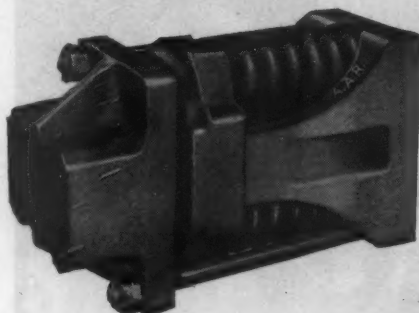
A. A. R. Alternate Std. E. Coupler



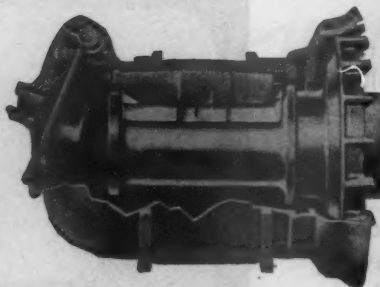
A. A. R. Std. Vertical Plane Horizontal Key Yoke



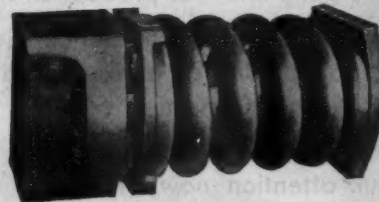
A. A. R. Alternate Std. Vertical Plane Swivel Yoke



M-17-A Draft Gear  
A. A. R. Approved



National Journal Box with Deflecting Fan and Flexo No. 2 Lid



M-50-B Draft Gear  
A. A. R. Approved



National B-1 Truck with Dual Control

76 YEARS SERVICE  
To Transportation

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Offices: CLEVELAND, OHIO

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco.

Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.



More power ★ Faster schedules ★ Increased  
truck earnings ★ Easier driving with

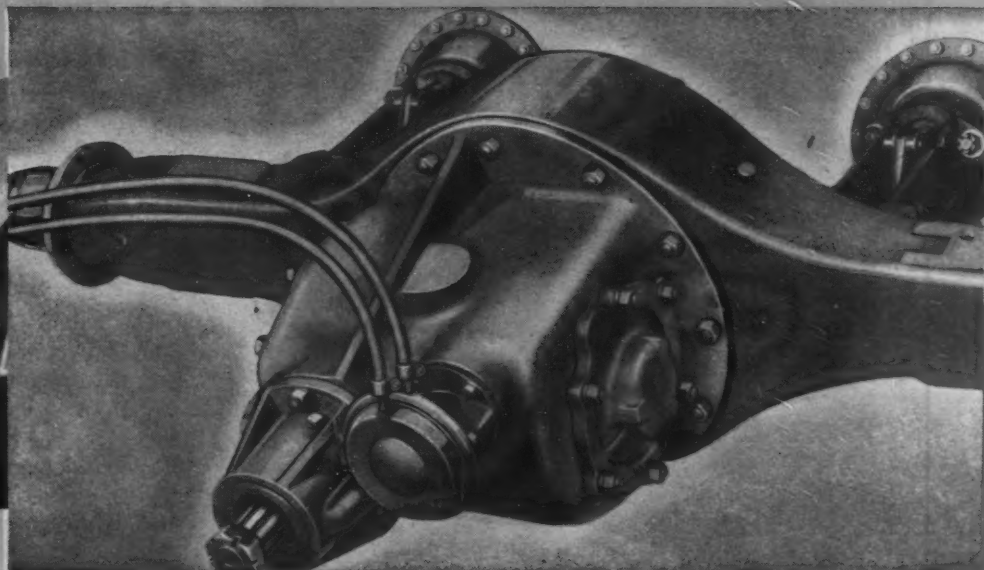
# TIMKEN

## *EASY POWER SHIFT*

and Timken 2-speed double reduction axles



Dash selector permits pre-selection of fast or slow axle ratio. Axle gears are power-shifted when accelerator is released momentarily.



Vacuum power chamber built into the axle furnishes power for shifting axle gears. All working parts are enclosed.

Capacity loads, fast schedules, more trips per day, longer hours on the road, are essential to meet today's highway transport demands. Only trucks geared for both power and speed can hope to meet these demands successfully.

Timken's new Easy POWER Shift, available only with new Timken 2-Speed Double Reduction Axles, provide the ideal combination of power and speed for modern heavy duty highway transport.

Easy POWER Shifting enables the driver to change axle ratios instantly, under any driving conditions, merely by using the Dash Selector and releasing the

foot throttle momentarily. Declutching is not necessary. Combined axle and transmission shifts, or gear splits, can be made as easily and in the same time as transmission shifts alone.

By doubling the number of transmission ratios, with any gear combination instantly available, Easy POWER Shifting greatly increases truck performance—provides more pulling power, speeds up schedules, reduces operating and maintenance costs, increases earnings per ton-mile, and reduces driver fatigue.

Write for descriptive folder.

38 YEARS OF AXLE ENGINEERING LEADERSHIP

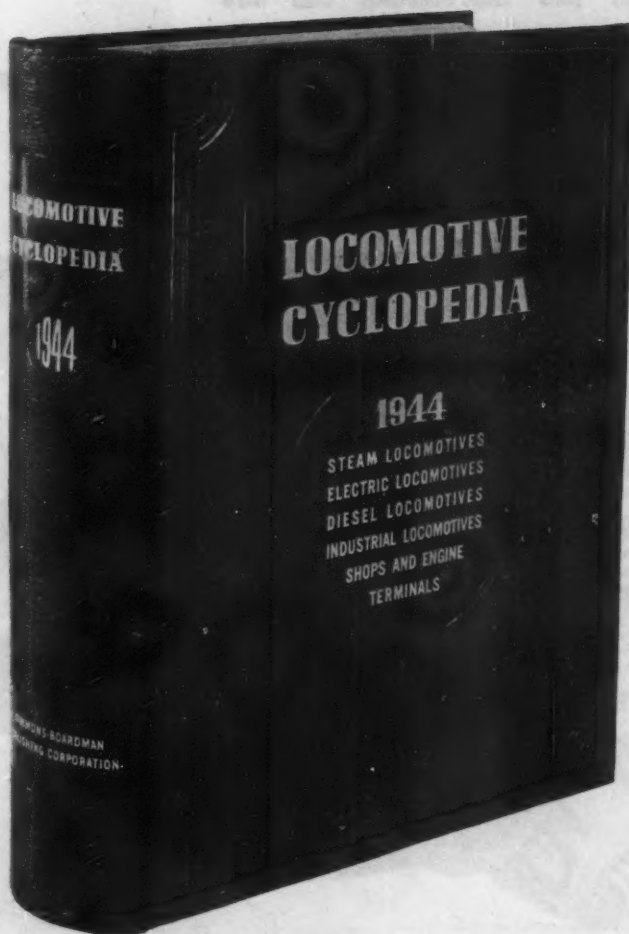


# TIMKEN AXLES

THE TIMKEN-DETROIT AXLE CO., DETROIT 32, MICHIGAN  
WISCONSIN AXLE DIVISION, OSHKOSH, WISCONSIN

Announcing Twelfth Edition

# LOCOMOTIVE CYCLOPEDIA



1,396 pages, 3,000 illustrations, 13 pages in full color, 9x12x13½ inches, weight 9 pounds, Fabrikoid, \$5.00

The Twelfth or 1944 edition of the **LOCOMOTIVE CYCLOPEDIA** will be ready in November. For nearly 40 years this book has been recognized as the standard reference book on all types of American built railway motive power—steam, Diesel-electric and electric. It is on the desk or reference shelf of railway executives, mechanical department officers, purchasing agents and other key men wherever American built motive power is in use.

The new edition contains hundreds of new detail drawings and photographs of the latest locomotives and their parts. Full information is given on their various types of equipment, appliances and materials. The big **Shops Section** has a new chapter on Layout and Operations of Shops for the repair of steam locomotives, three new chapters on the repair of Diesel-electrics and a complete new chapter on welding. The 90 other chapters in the big book have been carefully revised and brought up to date.

## Staff of Experts

The editor is Roy V. Wright, Managing Editor of *Railway Age*; the managing editor, Robert C. Augur, is Associate Editor of *Railway Mechanical Engineer*. The editor of the Shops Section is Harold Wilcox of *Railway Mechanical Engineer*, who is assisted by specialists on various branches of shop work. An advisory committee of four eminent mechanical engineers of the Association of American Railroads, Mechanical Division, has helped in the revision of important sections.

## FREE EXAMINATION COUPON

Simmons-Boardman Publishing Corporation  
30 Church Street, New York 7, N. Y.

When ready, send me postpaid a copy of the new Twelfth Edition of the **LOCOMOTIVE CYCLOPEDIA**, on Ten Days' Free Examination. If satisfactory I will remit the list price of \$5.00. Otherwise I will return the book without obligation.

Name .....

Address .....

City ..... State .....

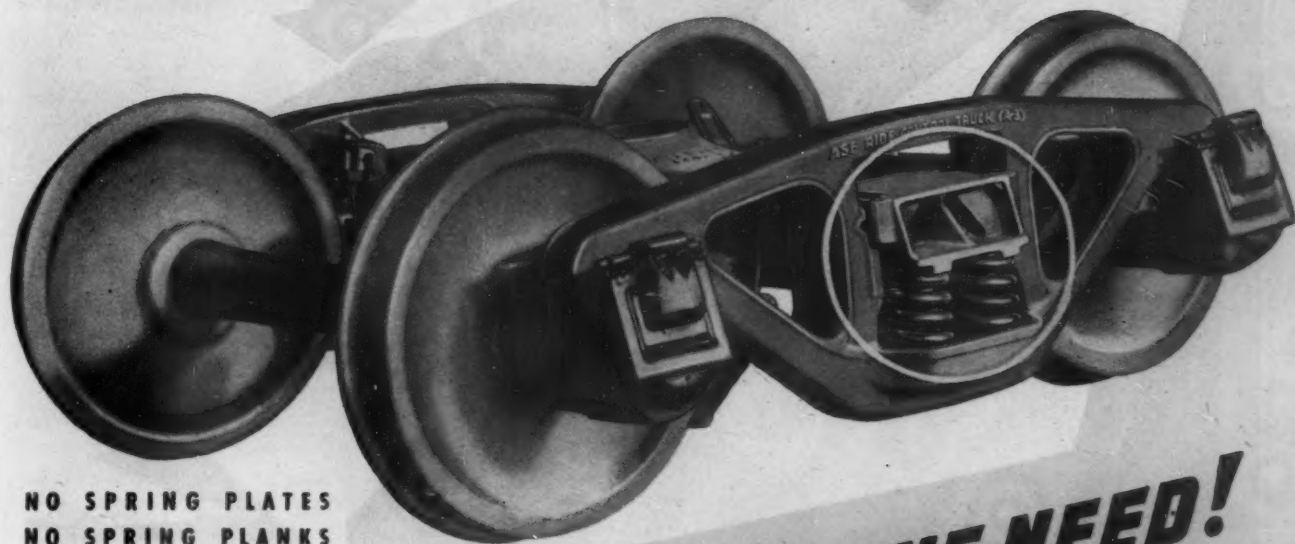
Company ..... Position .....

(This offer is limited to retail purchasers in the United States and Canada.) R.A. 11-11-44

## CONTENTS OF SECTIONS

Dictionary of Locomotive Terms—Steam Locomotives—Locomotive Boilers—Boilers; Water Supply—Boilers; Fuel Supply—Cabs; Fittings; Boiler Mountings—Engine; Cylinders and Driving Gear—Foundations and Running Gear—Lubrication—Couplers and Draft Gears—Brakes and Brake Gear—Locomotive Tenders—Safety Appliances—Electric Locomotives—Diesel Locomotives—Industrial Locomotives—Export Steam Locomotives—Locomotive Materials and Supplies—Locomotive Inspection, Tests and Operation—Shops and Engine Terminals—Indexes.

# FOR *Safety* AND *Speed*



NO SPRING PLATES  
NO SPRING PLANKS

## *Ride-Control* FITS THE NEED!

High speeds are *safe* speeds with the A. S. F. Ride-Control Truck (A-3). Not only does it meet all A. A. R. strength requirements, but it is proved in performance as well. Every day, in general interchange service on American railroads, the Ride-Control Truck is proving itself safe in high-speed operation. This, from a truck that is in the price range of the conventional freight-car truck.



THE TRUCK FOR TODAY'S NEED—TOMORROW'S SPEED!

**AMERICAN STEEL FOUNDRIES**  
CHICAGO

NOTE—MARK OF



FINE CAST STEEL





## *Track Bolts, too*

**have been vastly improved since the first World War**

Keeping pace with improvements in rail steels and sections, track bolts, too, have been vastly improved in recent years. As increasing railroad tonnage and higher speeds impose added burdens on track joints, advances in metallurgy and manufacturing techniques have produced higher strength bolts for rail joints, frogs and crossings as well as better hold-down screw and drive spikes, bolts and rivets for structures and specialized railroad fasteners.

Furthermore, track maintenance costs are lower because bolts and nuts made by today's modern machinery are held to close tolerances, thus shortening the time required on the job to insert bolts, run up and tighten nuts.

The fact that modern Track Bolts pull up tighter, stay tight longer, require less routine attention is a tribute to the energy, foresight and skill of America's manufacturers of fasteners.



**AMERICAN INSTITUTE OF BOLT, NUT  
AND RIVET MANUFACTURERS**

**1550 HANNA BUILDING**

**CLEVELAND 15, OHIO**

*Write*

WRITE for this informative periodical, containing useful data for users of bolts, nuts, rivets, screws and other headed and threaded products. Issued regularly. Free.



## NO TRAFFIC DELAYS WHILE IMPROVEMENTS GO ON

**P**owerful, economical, versatile earthmoving equipment led by "Caterpillar" Diesel Tractors is replacing the unwieldy work train for maintaining way, building road-bed, cutting down grades, relocating tracks, and for other improvements.

"Caterpillar" Diesel Tractors, with scrapers, rippers, bulldozers, wagons, winches, side-booms and other auxiliary equipment, give unit combinations having no superiors for sturdiness, versatility, operating economy and big daily work volume.

With such equipment, jobs go on without interruption. So do the trains. No necessity for frequent and costly side-tracking. No undue

prolonging of the job. Time and cost savings go hand in hand with traffic safety and on-time schedules.

Trunk line road-beds are taking a particularly heavy beating under the impact of war traffic. Growing off-track weaknesses need looking after—before mishaps occur. Filling banks and wash-outs, cutting lateral ditches, removing slide soil—these command round-the-clock maintenance.

*ALONG THE SANTA FE—A fleet of busy "Caterpillar" Diesel Tractors in action on an 80-ft. cut to eliminate a tunnel. Heavy grading work; 2000-ft. haul; 24-hour working schedule.*

The "Caterpillar" factory, field and dealer organization is steadfastly on the job to give all possible support to the tremendous war effort of the American railroads.

CATERPILLAR TRACTOR CO., PEORIA, ILL.

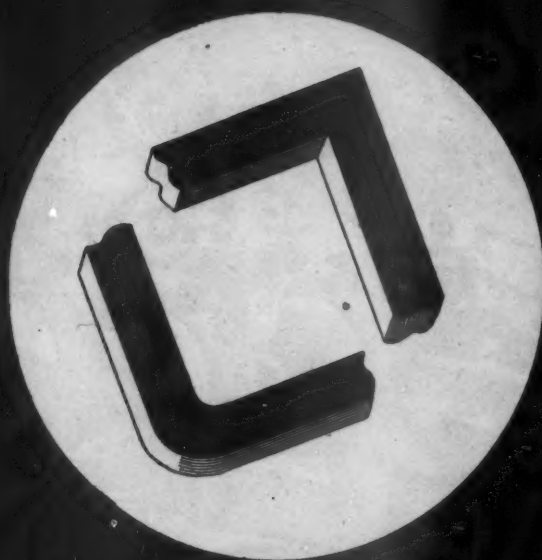
# CATERPILLAR DIESEL

REG. U.S. PAT. OFF.



ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

BETTER STEEL CASTINGS THROUGH RESEARCH



## Where Shape means Strength

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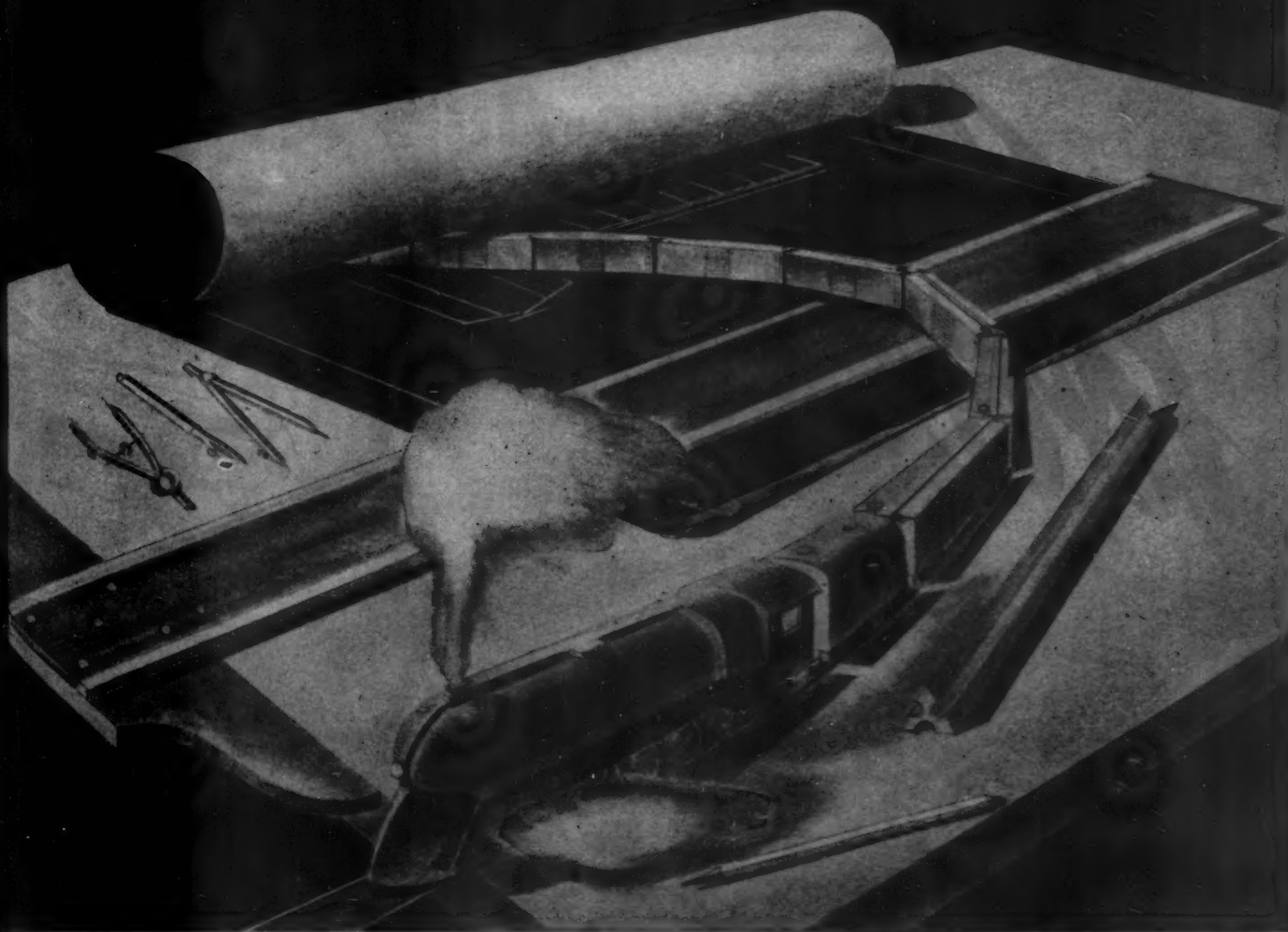
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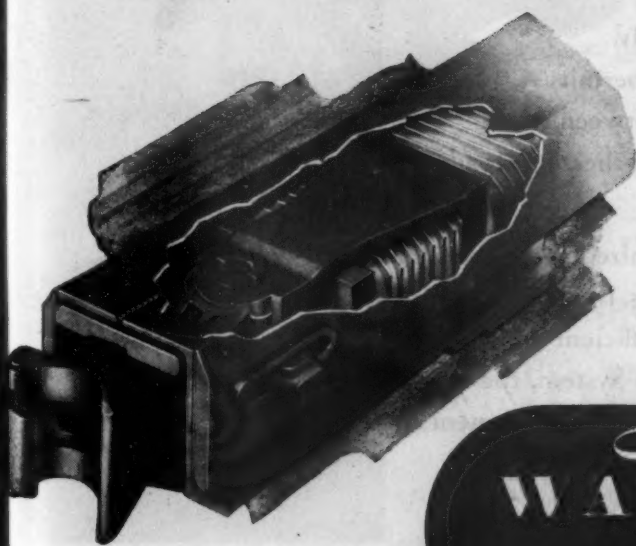
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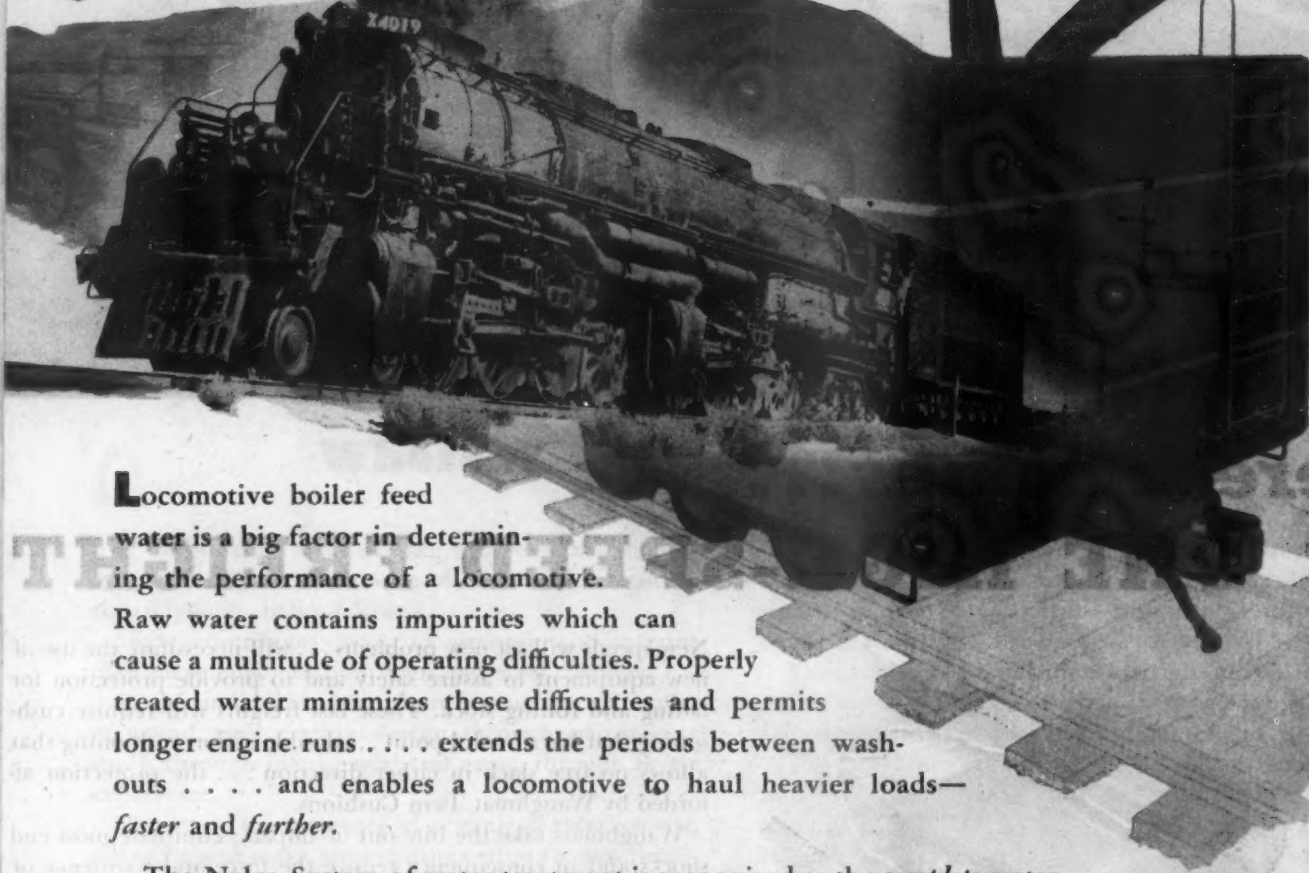
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# Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 117

November 11, 1944

No. 20

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# The Week at a Glance

**DEFEAT NOT CLEAR CUT:** The failure of Mr. Dewey to achieve the presidency is not an all-out victory for fascistic socialism, because Mr. Dewey and *some*, at least, of his ardent supporters were not whole-cloth opponents of state-ism in all its forms; while not *all* supporters of Mr. Roosevelt were of the Browder and Hillman persuasion. Mr. Dewey was, of course, much less a friend of government interventionism than Mr. Roosevelt—but he favored the St. Lawrence rascality, and condoned much that the New Deal has done to inject meddlesome bureaucracy into the people's business of getting a living. There is a world-wide epidemic of people trying to get rich by voting to have the cops give them their neighbors' substance. An editorial in this issue suggests that the struggle against this disease could not have ended with Mr. Dewey's election, and it certainly won't end with Mr. Roosevelt's victory. As more and more people are diverted from production to legalized or illegal thievery (or to catching thieves), there will be progressively less and less to steal. If people won't learn that lesson by precept, they will, in time, learn it by experience.

**POORLY-PAID SOLICITORS:** The question may profitably be raised whether the staffs the railways maintain to sell the superior service planned for the post-war period, match in quality the commodity they will have to offer. The answer is doubtless in the affirmative in many cases, but not in all—to judge from instances cited in an editorial in this issue. A head of an important off-line agency draws less than an engineman. Industrial salesmen doing work comparable to that performed by one road's solicitors are receiving three times the pay. There is more to the establishment of an effective sales organization than paying adequate salaries, of course—but that is half the problem. The other half is seeing that the kind of men are hired who are worth the money paid, and that their surroundings are such as to induce their talents to flourish.

**GOOD SAFETY RECORD:** In the nine months ended with September this year, there have been fewer fatalities on the railroads, but slightly more non-fatal injuries, than in the same period of last year—a praiseworthy record in view of the continued increase in traffic and the proportion of inexperienced help. There has been a welcome decline in fatalities and injuries to passengers in train accidents, and, likewise, a slight reduction in the total number of train accidents. Details are tabulated in the news pages.

**60 MILLION JOBS?:** The pricing of railway service has, for a generation, been an economic monstrosity—rates uneconomically low when business is booming and capable of paying generously for transportation, and relatively high, perforce, as regards other prices when business is inactive (because the carriers have not been allowed to accumulate reserves in good times). The railroads have tried repeatedly to harmonize their rates with other prices, to promote

healthful equilibrium in the economy, and they are trying again now in their appeal, being presently considered by the I. C. C., for the restoration of the 1942 rate increase, suspended by the Commission in May, 1943. The leading editorial in this issue points out that railroad net earnings, at the present maximum of traffic, are only barely sufficient to sustain a normal contribution by the railroads to national employment. If railroad traffic were to decline to 1940 levels, at present taxes and prices of labor and materials, railroad net earnings would become a minus quantity. And yet the New Deal agencies are objecting to the modest 4.7 per cent rate restoration sought by the railroads. Where are those 60 million jobs that Mr. Roosevelt promised the electorate going to come from, if his minions don't leave industry with money enough to hire people and buy the goods to keep factory workers busy?

**TERRE HAUTE COLLISION:** The I. C. C. report is out on the disastrous C. & E. I. collision near Terre Haute in September in which more than a score of passengers (service men, largely) lost their lives; the findings are reviewed in our news pages. Contributing causes included meet orders ignored and operation at 55 m. p. h. in a yellow block. The I. C. C. thinks there ought to be automatic train control or cab signals to prevent such accidents, but, if a layman be permitted the observation, it might be remarked that a crew too preoccupied to consider of importance the instructions both of meet orders and wayside signals could, possibly, also react likewise to an additional notification of impending danger.

**NO LAUNDRY TROUBLES:** The Southern didn't go into the laundry business by choice—but at Chattanooga it had to do so to keep its Diesels in wiping rags; and thereafter it expanded the operation to take care of dining car linens. All this took some doing, what with the dearth of suitable machinery—but done it was. Money is being saved but, more important even than that is the unheard-of accomplishment in these days that the dirty clothes are coming back in 24 hours, and really clean. This happy story is told in its interesting detail elsewhere in this issue.

**DIESEL SHOPS:** Makeshift is giving way to system in the maintenance of Diesel power, now that there is enough of it—and enough experience—to get the work scientifically organized. In an article in this issue an expert in the field makes known his conclusions on what the requirements are for a workmanlike approach to this important job; and an editorial draws attention to the points of agreement and dissimilarity between this authority's recommendations and those of another competent exponent of the subject whose observations we published recently. There isn't, yet, much literature to which railroad management can turn for guidance on this pressing question—and it is pleasing to us that we have been able to alleviate this dearth with such well-informed assistance.

**TRAVEL SWINGS UP AGAIN:** In February of this year travel volume was almost 27 per cent above the previous year—but the increase dwindled rapidly away until August when the percentage increase was only 0.1 per cent above a year ago. But now September comes along with a 4 per cent increase over last year. In calling attention in its monthly survey to this shift (reported in our news pages), the Commission's Bureau of Transport Economics refuses to predict whether this upswing is temporary or whether it initiates another mounting trend.

**RATE CASE COMPLETED:** Oral argument in the rate case—in which the railroads are seeking a restoration of the 4.7 per cent rate increase of 1942 which was suspended last year—was completed last week, and the I.C.C. has now gone *in camera* to reflect on the opposing arguments presented by the contestants. What these arguments were is reported in an article on page 726. The O.P.A. takes the view that the railroads have been making too much money, and it objects to earnings being calculated after taxes. The state commissions join the O.P.A. in seeking permanent cancellation of the increase. The N.I.T. League "walks the middle line" in asking the further suspension for six months, but not the cancellation, of the increase. The A.A.R. asserts the obvious fact that taxes are just as much an expense of doing business as any other expense—and it particularly insists that it is not in the public interest to let railroad revenues lag into a period of depressed traffic, when the carriers will once again be advised that "a period of declining economic activity is not the time to raise prices."

**QUICK SERVICE FOR LOCOS:** Double-spotting of locomotives on trains—once for water and another for fuel—is becoming a matter of history on up-to-date railroads; and a paper herein by the Santa Fe's fuel conservation engineer, E. G. Sanders, tells just what well-located and competently-planned servicing facilities can do to curtail time loss at service stops. He gives some specifications for the kind of installations needed: Water cranes which will fill the biggest tender tank in 3½ min., and fuel delivery which will do its job simultaneously with the watering, and in a maximum of 3½ min.; ash-handling and sanding equipment which will do their work while the fueling is going on; duplicate facilities at each end of the station, so servicing can be done, regardless of direction, while station work is proceeding. To get the most mileage out of efficient locomotives, the servicing equipment at turn-around terminals needs to be just as quick as at through stops.

**TRAIN PHONES ON K. C. S.:** The carrier-type 2-way train communication system with which the Kansas City Southern has been experimenting for some time is described in an illustrated article in these pages.



*A New  
Design...*



## OKOCENTROL C. T. C. AERIAL CABLE

• A new cable — Okocentrol C.T.C. aerial cable — offers additional advantages for coded line circuits in centralized traffic control systems. Besides preventing leakage at insulators, Okocentrol also eliminates the variable electrical characteristics resulting from adverse weather conditions which are common with open line circuits.

Okocentrol is installed in metal rings on steel messenger wire. The steel messenger wire is fastened directly to the pole below the crossarms. Should the pole line go down, the messenger wire will take the strain, thus protecting the vital working cable. This has been demonstrated many times in actual service.

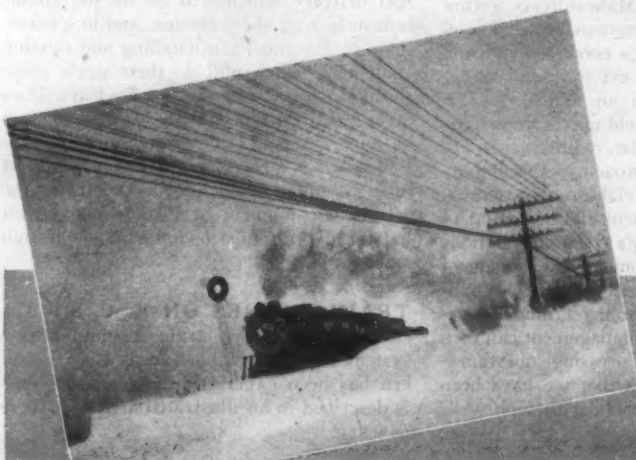
This new improved Okocentrol C.T.C. aerial cable has a mutual capacity at 1,000 cycles (measured dry) of less than 0.152 microfarads per mile.

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• For further protection in game areas, the cable can be supplied with a metallic tape armor covering. For direct burial, a suitable underground finish can be supplied. Okocentrol cables can also be designed with an in-built copperweld messenger wire bound to the cable with a crimped, spiraled copper tape, making a single unit easily installed in one operation. The Okonite Company, Passaic, New Jersey.



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insulated wires and cables



## RAILWAY AGE

### Railway Rates, Operating Costs and Taxes

All industries must be treated alike as regards prices and rates, and allowed to make adequate profits, if in the aggregate they are to provide sufficient construction, production, transportation and employment in the post-war years. Wholesale prices of commodities allowed to be charged by the government have this year averaged 7 per cent higher than in 1929. Railway freight revenue per ton-mile averaged 10.78 mills in the first seven months of 1929 and only 9.36 mills in the first seven months of 1944. Therefore, an increase of 23 per cent in revenue per ton-mile would be required to reestablish the relationship between revenue per ton-mile and wholesale prices that existed in 1929. But all the railways are asking of the Interstate Commerce Commission at present is that it authorize restoration of an advance of 4.7 per cent in freight rates that was in effect for a period prior to May 15, 1943, but was then suspended by the Commission in the belief that railway net earnings would be large enough without it.

The Commission repeatedly has made the mistake of causing reductions or refusing advances in rates when prices were high and traffic was large. The Commission's theory at such times was that the railways' net earnings showed they did not need higher rates. Then when traffic, or prices, or both, and also railway net earnings, declined, the Commission, as in 1931, refused advances in rates because of the declines of general business and prices. Hence the railways' inability throughout the last quarter of a century to earn the fair return to which law, courts and Commission have held them entitled.

Present conditions afford the Commission opportunity to begin reversing its past unfair and economically unsound policy. For the present volume of production and distribution of goods, and present prices as compared with present freight rates, certainly afford an argument for the small advance in rates being sought. And so do the facts about present and prospective railway earnings and expenses.

The advance in rates sought, even on the basis of the unprecedentedly huge freight traffic handled by the railways in the twelve months ending with July, 1944, would cost shippers only \$326 million annually. Contrast this with the following estimates made by the Commission's Bureau of Transport Economics and Statistics on May 5, 1944, of how much increased operating expenses the railways would have to incur to handle the traffic of 1940 at present increased unit costs: "Wages and salaries average about 26.6 per cent higher. If effective in 1940 the addition to operating expenses would have been \$493 million. . . . Depreciation accounting . . . introduced since 1940 . . . might have added about \$67½ million. . . . Payroll taxes . . . would add \$6 million. . . . Fuel and power . . . at recent unit costs would have increased operating expenses about \$84.7 million and other materials used in 1940 would have cost about \$100 million more." The increases in costs since 1940 cited would have increased 1940 operating expenses by \$751 million. Railway gross earnings in 1940 were \$4,298 million; operating expenses, \$3,090 million; net operating income (after taxes) \$682 million; and net income (after taxes and fixed charges), \$185 million. The increase of \$751 million, or 24 per cent, in operating expenses would have changed the net operating income earned in 1940 into a net operating deficit of \$69 million; the net income earned into a net deficit of \$566 million; and the entire industry would have been bankrupted.

These facts demonstrate that, either (1) the increases in wages and prices that have occurred during the war will have to be largely or wholly wiped out, of which there is no prospect; or (2) the railways, in order to pay the increased wages and prices will have to have

Efficiency  
FOR VICTORY

in future much larger than pre-war gross earnings due to larger traffic, higher rates or both. And this takes no account of taxes (excepting payroll) which in 1940 were \$280 million, are now four times this large, and unquestionably will remain much larger than before the war.

Railway gross earnings in the year ending with July, 1944, were \$9,362 million. Only a return to the depression that still prevailed in 1940 could reduce them to the \$4,300 million that they were in that year. But traffic and gross earnings are sure to decline after the war; and from the \$9,362 million gross earnings made in the year ending with July, 1944, the railways—because of the huge wartime increases in their operating expenses and taxes—derived only \$1,189 million net operating income, as compared with \$1,275 million net operating income derived in 1929 from gross earnings of only \$6,360 million.

When traffic and gross earnings decline, operating expenses also will decline, but not proportionately. How much federal taxes will decline will depend, first, on the decline in the net income to which they apply, and, second, on the reduction in the rates of taxation. But one thing is certain—viz., that, whatever their operating expenses and taxes may be, the railways will have to earn approximately as much net operating income in the post-war period as they are deriving now from their present unprecedented gross earnings, if in the post-war period, by their buying of equipment and materials, they are to put their properties in satisfactory condition and contribute their share to total employment. Why this is true has been shown by *Railway Age* in three recent editorials (October 7, page 537; October 14, page 575, and October 21, page 611). And it is but another illustration of the economic illiteracy—or worse—of those whose policies kept the nation in a depression until we entered the war, that the strongest opposition to the small advance in freight rates being sought by the railways has come from representatives of the New Deal who strongly emphasize that “full employment” must be provided by the railways and other branches of private enterprise—or else.

## A Battle Is Over, but Not the War

The New Deal has won again, but the recent election was only a single battle in the war to maintain political and economic freedom. The outcome of a single engagement, while important, is not in itself conclusive. Neither the forces of economic freedom nor of socialistic fascism have won a clear victory in the election—because both these forces divided their support between the opponents. In general, the outspoken socialists and communists have supported the Democrats—while the clandestine and unconscious socialists and communists (i.e., business interests who proclaim free enterprise principles and practice socialism wherever they find it to their advantage) are Republicans. Unalloyed loyalty to the political and economic principles upon which the nation was founded and attained its strength would be precious hard to find in either political camp.

Those whose time must be largely spent in dealing with practical problems do not find it easy to interest themselves in such abstract political questions—but they are of special importance to railroad men, because it is in the arena of transportation that the principal struggle of socialism versus free enterprise is taking place. Those actually participating in this contest on the side of socialism seem to be singularly unaware of what it is they are fighting for. The effective advocates of the extension of socialization in transportation are, almost entirely, business men who praise free, self-sustaining enterprise in the abstract and are doing more effectively to destroy it than all the Browders and Hillmans could do if multiplied tenfold.

These unconscious or clandestine socialists say that government invasion of the economy by public spending is all right to the extent that such spending is “good for business” (meaning, good for *their* business); and, accordingly, they favor projects such as T. V. A. which give them power and transportation which is “cheap” because somebody else pays part of the costs, while self-supporting private investment in power and transportation is placed at an intolerable competitive disadvantage. They say in justification of enormous expenditures on highways that highway users “pay their share,” thereby implying that there is a “share” of the cost of transportation which should be paid by others than its immediate users.

No privately-financed transportation facility has any means of forcing non-users to pay any portion of its costs—so anyone who advocates highway finance on other than a strict “public utility” basis of complete and direct support by users (and the enemies of the “public utility” concept include practically all automotive and road-building interests) is, *ipso facto*, a transportation socialist. He is favoring a policy which will force all of transportation into dependence upon government financing—relieving the entire industry, as much of it is already relieved, of its dependence upon the voluntary support of its patrons for its advancement. Advocates of the St. Lawrence project and other toll-free waterways are, of course, even more thoroughgoing in their effective socialism than are the highway interests, because promoters of inland waterways insist that the public treasury pay all, and the users none, of the costs of such facilities.

In the interest of national defense and continued improvement in economical and efficient transportation service to industry, the railroads should, during the dozen years following the current war, add to their *net* investment at least as much as the \$7 billion they laid out for this purpose following the last war, and without which they could not conceivably have carried the present load of war traffic. The nation's most effective, and hence most dangerous communizers and totalitarians, are those business leaders who insist on the extension of tax-financed government competition with the railroads to a degree that threatens the railroads' ability to finance from private sources the im-



provements in railroad plant which the public interest requires. Browder, Hillman and other outspoken subversive leaders have taken a lot of blows which, in fairness, ought to fall on other shoulders.

## Freight House Safety

Freight house accidents seldom result in fatal injuries, but there is no source that can be so productive of minor injuries as the station platform if proper precautions are not taken. Mashed fingers and toes, sprains, cuts and bruises can, however, if sufficiently multiplied, result in a staggering total of lost time, and that is particularly serious now, under war-time conditions. Moreover, a safe freight house is also one that shows a low percentage of damage claims to merchandise, since, inevitably, the type of slipshod operation and carelessness that lead to personal injuries also lead to improper handling of merchandise, with attendant damage. A trucker or stevedore who mashes his finger through carelessness is also extremely likely to carry such carelessness to the handling of freight as well.

One of the principal reasons for sounding the warning as to freight house safety at this time is that there is probably no type of labor, with the possible exception of section labor, that has seen the war-time turnover in man-power that has occurred on the station platforms. In the first place, freight house employees were, on the average, younger than almost any other class of railway employees and hence the draft made greater proportional inroads among their ranks. Secondly, men experienced in handling materials were eagerly desired by most war plants, and the loss of man-power to war plants eventually became far more serious than the draft. In fact, in some sections of the country, particularly on the West Coast, station platforms were practically denuded of man-power just at the time when freight station labor was most vitally needed. For the railways it was a case of taking what they could get. The result has been that freight house platforms contain, perhaps, a greater proportion of inexperienced labor than any other phase of railroading.

Fortunately, inexperienced men are not always careless men. In fact, in many instances, it has been found that, with proper training, certain inexperienced men may be more careful than the "old heads," who, through familiarity with the hazard, may have

become heedless. That a freight house, even under present conditions of labor turnover and war-time hustle and bustle, need not be a source of annoying accidents is indicated by the record of a freight house in a metropolitan center, where some 30 cars of merchandise are loaded daily, and which has not had a reportable accident for ten months. When it is considered that this freight house force consists of less than ten per cent of pre-war employees, the record is more remarkable and shows what can be done, even under adverse conditions. It also shows that American railways, with their proud record of safety in peace-time, need not relinquish this honor in war-time.

## Selling the Service

According to a number of railway executives, the shippers and travelers of America are going to have better freight and passenger service after the war than ever before. When competition is again a factor, they will be prepared to meet it on the basis of either speed, convenience or comfort and in many cases all three at once. The plans for such service are well under way. Large improvement programs involving the expenditure of many millions are being completed as rapidly as manpower and material shortages will allow, not only for handling the war-time traffic of the present, but more to provide for the high speed freight and passenger schedules of the future. All of this is most encouraging and augurs well for the future of the industry; but the provision of such services is not enough—the public must be sold them.

The late traffic vice-president of one of the big railways once said that advertising and salesmanship other than routine calls and passing out cigars was unnecessary, because 90 big customers supplied the bulk of his railway's traffic, and these could be kept in line by

### *A Horse Often Talked About But Seldom Recognized*





the executives. While it was true that 90 big shippers gave this railway most of its tonnage, the aggregate of shippers using the line ran into thousands, and it was the aggregate traffic they did or did not give to the railway that meant the difference between bankruptcy and trusteeship or net earnings and sound finances.

This same railway has had a low wage scale in its off-line agencies. A recent check disclosed that one of its general agents in a large city with a large territory was earning less than most of the railway's enginemen. In the same city, a district sales representative covering a smaller territory for an industrial concern that earned only about three-fourths as much gross income as this railway, was being paid three times as much as the railway's general agent, and a survey of 12 other companies showed that their district sales managers were all paid higher salaries, the lowest being \$2,000 a year more than the railway's general agent.

This vice-president of the old school was proud of the way he held down the salaries of all his traffic solicitors. What he did not mention was the unusual turnover in his sales staff and the further fact that their average age was so much higher than normal as to indicate that those remaining were largely lacking in enough initiative and ambition to get another job and also that young men were not being attracted in place of the veterans. Despite the efforts of the present vice-president, this railway faces the future poorly equipped for meeting competition by alert, intelligent salesmanship.

The success of their present institutional campaigns and the fact that increasingly large amounts of money are being spent for truly fine copy, indicate that the railways are awakening from their long sleep as far as advertising is concerned. Unfortunately, no such tendency is evident as far as sales are concerned. No amount of salesmanship will induce a customer to ship more freight than he wants to ship, but traffic men alert to serving their customers can do much in widening the markets of their shippers; and a good traffic solicitor can do much when he is backed by the right kind of service to prevail upon a shipper to use the railway instead of some competing form of transportation. Railway salesmanship should be made to match the improvements in operating efficiency and service.

## Diesel Shops

With Diesel-electric locomotives finding a place on an increasing number of roads for passenger and freight road service, as well as for switching operations, it is well that the many ideas and experiences to date in the running maintenance and heavy repair of this class of power are beginning to be discussed more widely, both in the interest of its most efficient operation and maintenance and in the interest of protecting the large investment in it. In fact, it has been to the disadvantage of many roads that thus far so little has been written on this important subject. It must be said,

however, that until recently, with widely conflicting ideas and widespread use of make-shift facilities, there has been little of definite value to write about. Fortunately, that situation is changing rapidly, as definite plans and policies concerning Diesel maintenance and repair are beginning to jell in the minds of many engineering and mechanical officers.

This improved situation is evidenced clearly in two outstanding articles on Diesel shops, both of which should be given the most careful attention by all roads now operating or contemplating the operation of Diesel power. One of these, entitled, *What Kind of Repair Facilities for Diesel Locomotives?* by P. H. Hatch, mechanical engineer, New York, New Haven & Hartford, appeared in the October 21 issue of the *Railway Age*. The other, a two-part article entitled, *What Features in Diesel Shops?* by H. B. Ellis, director of service and parts, Electro-Motive division, General Motors Corporation, is included in this and the preceding issue.

Both of these articles, born of a number of years of experience, recognize the basic fact that, as with any piece of high-grade machinery, routine maintenance and periodic heavy repairs are essential, and that in the interest of maximum serviceability, efficiency and economy that adequate and properly designed and located facilities be provided. Having established the importance of this fact, both authors set forth the basic principles involved in Diesel shop design and equipment; recognize the variables inherent under different operating conditions, intensity of requirements and road policies concerning heavy repairs; and, while giving primary attention to the provision of new shop facilities, do not overlook the possibilities inherent in existing available shop facilities for carrying out Diesel work.

As regards the general type of shop building and built-in facilities desirable, there is marked agreement in the two articles. Likewise, both articles are in full accord on the essentials of sound building construction, adequate day-lighting and night illumination, with a minimum of shadows; adequate ventilation and uniform winter heating; adequate hoisting and wheel and truck-changing facilities; and a high degree of cleanliness. Significant, however, are certain important differences in recommendations, which cannot be overlooked.

Thus, while together the two articles go a long way to establish the essentiality of adequate Diesel shop facilities where this class of power is employed, and by their agreement in large part indicate the marked advance that has been made in Diesel shop design during the last few years, the differences of opinion still existing suggest that the last word in at least shop details has not been written, and that continued study and thought are highly desirable. With a number of roads considering the construction of Diesel shops in the months immediately ahead and in the post-war period, this is particularly desirable if the most nearly ideal facilities are to be provided to meet specific conditions, and if costly mistakes are to be avoided.



The Southern's Well-Equipped and Well-Designed Citico Laundry Is a War Venture That's Paying Dividends in Service and Efficiency

# FROM RAGS TO LINEN

**A success story of how the stores department of the Southern started taking in washing, solved several problems and now shows a neat profit in laundering**

UNLIKE a certain political policy, that in the opinion of its critics would have forced the good citizens to take in each other's washing as a means of livelihood, the stores department of the Southern, in its new Citico (Chattanooga), Tenn., laundry is taking in some Southern washing and showing a neat profit in the undertaking. Not only is the quality of the work equal to all pre-war requirements, but more important still, the finished laundry is being delivered as and when promised, on a 24-hr. delivery schedule.

## Forced to Launder Wiping Rags

Stewards of the 12 or more Southern diners that are being serviced from the new Citico laundry are smiling more frequently these days despite the crush of war-time crowds, for one of their most aggravating problems has been solved. Once again a plentiful supply of snow-white linen is available and good-natured Southern waiters are clad in white jackets that have lost their "tattle-tale gray" appearance. The laundry was placed in service on August 1, 1944, and currently is handling some 5,500 pieces of linen per day, representing an average dry weight of approximately 1,800 lb., with a force of 12 girls and one machine operator.

There is an interesting story back of the latest development of the Southern stores department and one that is directly connected with the operation of Diesel locomotives.

The introduction of Diesel switchers and road locomotives in the Chattanooga territory called for the use of large quantities of wiping rags and the exclusion of all forms of stranded material around engines of this type. For a time these wiping cloths were cleaned by local laundries until the time came when these overtaxed facilities were no longer able to meet the demands of local industries and the general public and, the stores department of the Southern was forced into the laundry business. Accordingly, the Citico oil house was equipped with a rag laundry comprising one washer, one extractor and two dryers. It was not long after the rag laundry was placed in operation that its worthwhile results indicated the desirability of establishing a railway laundry for handling the linen from Southern diners.

Despite the many wartime restrictions that made the procurement of critical material and new laundry equipment impossible, the ingenuity of the stores department officers was fully equal to the task. For now, a few months later, with rebuilt laundry equipment housed in a remodeled yard building, that previously had been used for other purposes, removed to a suitable location where it was provided with a concrete foundation and concrete floor, the Citico laundry already has developed an efficiency which marks the whole undertaking as a success. After its relocation, the 24 ft. by 76 ft. frame building which originally had been sided with Transite, was provided with two large roof ventilators, one on



each end of the structure, in anticipation of the later procurement of suitable ventilating fans. A new roof of asphalt felt shingles was added and the interior is lighted by a series of twin casement windows well above the floor, thus providing ideal wall space for the location of the laundry equipment. The walls and ceiling are of composition board and the lighting system comprises a series of fluorescent lamps and appropriate fixtures designed to provide good lighting for every laundry operation.

The laundry equipment itself consists of two washers, two extractors, one flatwork ironer and six garment presses, together with appropriate drying racks and tables for folding finished laundry. The cylindrical type washers are 36 in. in diameter by 54 in. long and are both rebuilt machines, one of which was rebuilt in the Southern shops, and the second by a manufacturer of laundry equipment. Each machine is driven by a 3 hp. motor with a V-belt drive and has a capacity of approximately 155 lb. (dry weight) of laundry.

The centrifugal type extractors comprise one 26 in. and one 30 in. machine, both of which are operated by vertical motors and adequately protected by interlocking safety devices. The flatwork steam ironer is of the five-roll type with 8 in. cylinders or rolls which finish both sides of the goods. The machine has a width capacity of 100 in. and is driven by an electric motor; the belting, the clutch and the drive are enclosed in an all-welded steel safety case.

### Rebuilt Machines Do the Job

The six garment presses are all rebuilt machines that have been designed especially for the linen supply industry and are equipped with automatic safety push-button control. These machines are operated by compressed air which cannot be applied until both hands of the operator are in contact with the push-button where they must remain until the head is locked, for the removal of either hand prior to the locking of the head returns the head to the wide-open position at once.

After the bags of soiled linen from the dining cars are received at the Citico laundry, their contents are sorted into plywood bins. Later, the soiled linen is loaded into large canvas baskets, each of which is weighed on a platform scale to determine the amount of soda ash, soap, bleaching solution and rinsing agent required, prior to the charging of the washers. The washing process consists of three different passes and the weight of the charge varies from 125 lb. to 140 lb. First, the soiled linen is immersed in cold water for approximately one minute and then the hot water, soap flakes and the soda ash are introduced for the initial pass. The washing machine is started and the process is continued for ten minutes, after which the charge is drained and then washed in a soap solution for 15 minutes; after another draining the final washing pass consists of agitating the linen in a solution of bleaching agent and calgon for a period of 10 to 12 minutes after which the charge is drained. Because of the need for handling certain items separately, operations require 10 to 17 washings daily.

The rinsing comprises two hot water and three cold water passes, calgon being added to the last cold water rinsing to assure thorough removal of the soap solution. The entire rinsing procedure requires from 7 to 8 minutes. When the clean linen is removed from the washers it is loaded in centrifugal extractors, each of which has a capacity of approximately one-third of the washing machines. The extractors prepare the work for faster ironing in order to keep the work of the entire

plant flowing steadily. Good extraction also permits ironing flatwork at a greater speed. Consisting essentially of a perforated metal basket which is revolved about a vertical axis at high speed, the extractors remove the rinse water by the centrifugal force thus generated.

After removal from the extractors the flatwork goes to the shake-out tables where two girls are employed regularly in shaking it out and placing the larger pieces, such as tablecloths, on 2-in. by 2-in. ash poles 8-ft. long which are supported on appropriate standards made of welded scrap pipe. Individual pieces are folded and the ends are tucked over in a way to facilitate handling in the next step when they are fed into the flatwork ironer, which usually is operated by two or three girls.

### A New "Wrinkle" in Folding

After ironing, the napkins are folded twice to one-quarter of their size. Incidentally, this is a new development within the short period in which the laundry has been in operation and it is a procedure which is likely to be continued, for it not only eliminates two foldings but it also makes for greater convenience in unfolding by patrons of the dining cars. The napkins are packed 20 to the bundle and the tablecloths are put up in packages of ten. Tablecloths are folded by two of the girls as they come directly from the flatwork ironer while the napkins are folded on one of the folding tables which are 3 ft. by 9 ft. and are covered with extra heavy linoleum which supplies a good working surface.

The waiters' jackets, after being removed from the extractors, are taken to the drying presses which consist of two sets of three each. Each set is operated individually or in tandem by a single operator. When a girl is operating three machines in tandem, as she finishes an operation on the first machine, she trips a trigger on that machine which opens the head of the second machine as she turns to it. Thus one trigger on each machine works in tandem with the next machine in a time-saving operation which is repeated from one machine to the next in each set of three.

### 7 Steps in Pressing a Jacket

The pressing of the jackets represents the most complicated procedure in the laundry, involving seven different steps. Usually, from 275 to 300 jackets are laundered each day although as many as 404 have been washed and ironed in one day. Mushroom type presses are used to finish the collar and shoulders, after which the garment is transferred to another press where the sleeves are pulled out, placed together, laid flat and pressed, following which the garment is turned over and the opposite side is pressed in the same manner. Three more operations are required to finish each garment: it is pressed down the back, and then two operations are required to press each side of the front. After being pressed the jackets are removed to a rack made of welded  $\frac{3}{4}$ -in. scrap pipe from which they are picked up, by a girl who has become expert in folding them, and packed into bundles of ten for shipping. In this operation one girl folds the jackets that are pressed by two girls and the jackets are folded in an attractive manner with the bosom to the front while the absence of a jacket collar further simplifies the procedure.

The Citico laundry project was developed by and is under the supervision of W. W. Folger, division storekeeper, acting under the general direction of N. B. Coggins, general storekeeper, and C. B. Neubauer, assistant to vice-president.



# Facilities to Keep Locos. Moving

Arrangements should permit sand, water and fuel to be taken at one spot—Freight and passenger need separate plants

By E. C. Sanders

*Fuel Conservation Engineer, Atchison, Topeka & Santa Fe*

THE two most important considerations in connection with installation of servicing facilities for locomotives used in long through runs are first, location and, second, design of the facilities so that all servicing operations can be performed with one spotting of the locomotive. Servicing facilities at intermediate stations should be located on the main line tracks where operating conditions will permit. This is particularly important for passenger locomotives.

Water cranes should be provided that will deliver water to the locomotive tender at a rate fast enough to fill the largest capacity tender in  $3\frac{1}{2}$  min. The minimum delivery rate for water should be not less than 4,000 gal. per min., and with tenders having a water capacity of 20,000 gal. or more, the delivery rate should be over 5,000 gal. per min. Water cranes are now in service that can deliver 7,000 gal. per min.

Delivery of fuel should be accomplished within the time required to fill the tender with water, or not to exceed  $3\frac{1}{2}$  min. For coal-burning locomotives, this requires swinging aprons or spouts that will permit filling the tender without moving the locomotive. Installations have been made where the spout swings parallel with the track that will deliver 42 tons of coal in 75 sec. The

fast delivery of fuel oil to oil-burning locomotives requires oil cranes capable of delivering 1,000 to 1,200 gal. of fuel oil per min. Heavy fuel oil generally used on oil burning locomotives must be maintained in the wayside supply tanks at temperatures ranging from 130 to 160 deg. F. to assure this fast delivery. This is also necessary so that no steaming difficulties will occur due to the oil being too cold to flow to the burner or too heavy and thick to atomize properly.

## Quick Ash Removal

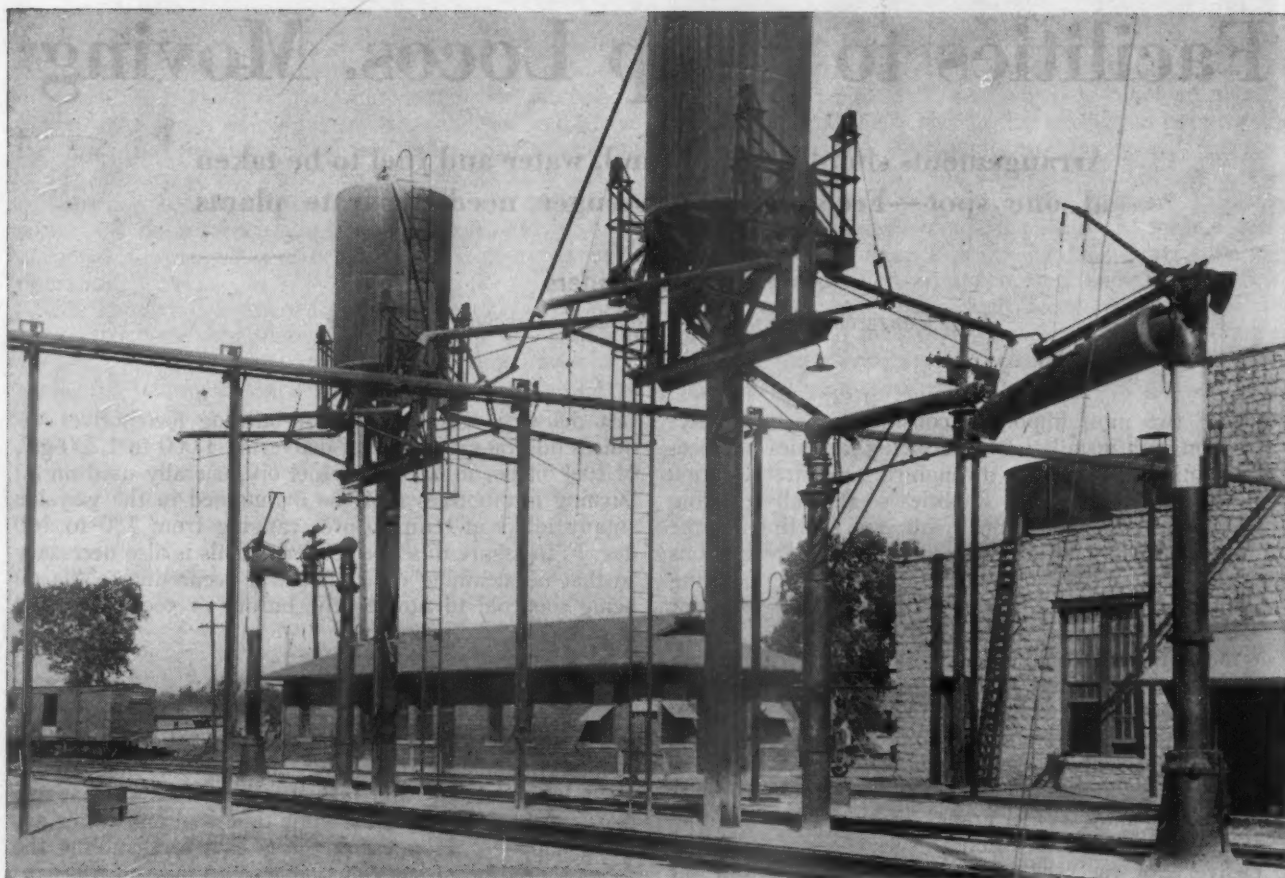
The dumping of ash pans on coal-burning locomotives requires installation of cinder- and ash-handling equipment located below and between the tracks so that ash pans can be dumped at the same time coal and water are being supplied. Hoppers or dump cars for handling the ashes should be of sufficient capacity to take an ash-pan-full of ashes. For the quick removal of ashes from the ash pan, it is desirable to provide a water hose for washing the ashes out of the pan. However, water can only be used during non-freezing weather. It is essential to shake the grates before arrival at the station in order to reduce the time required for cleaning fires to a minimum.

Sanding facilities should be provided at some of the more important servicing stations. Adequate sanding fa-

Note—This article is an abstract of a paper prepared for the 1944 year-book of the Railway Fuel and Traveling Engineers' Association.



Servicing an Eastbound Passenger Locomotive at a Station Stop—Similar Facilities for Westbound Trains Are Located at the Opposite End of the Platform



**High-Speed Servicing Facilities for Oil-Burning Freight Locomotives at an Intermediate Terminal**

cilities are particularly important at stations where oil-burning locomotives are serviced. Facilities for delivery of sand to oil-burning locomotives should have two overhead sand bins or reservoirs so rail sand can be delivered to the sand dome simultaneously with the delivery of flue sand to the sand box on the oil tank.

Rapid servicing of locomotives at the initial and final terminals is just as important as it is at intermediate servicing stations en route. The heavy traffic now being handled by all railroads due to the war has doubled and trebled the number of locomotives turned at most large enginehouses. Serious congestion will occur at such terminals if the locomotive servicing facilities are inadequate or not properly located.

[The author here referred to an article in the September 2, 1944 issue of the *Railway Age* describing improvements which were made at the Armourdale, Kan., terminal of the Chicago, Rock Island & Pacific.—EDITOR.]

### **8-Minute Servicing at One Station**

The high-speed facilities for servicing oil-burning steam passenger locomotives illustrated serve eastbound passenger locomotives. They are located at the east end of a passenger station platform so all servicing operations can be performed while the train and locomotive are standing at the station. Similar facilities are located at the west end of the passenger station platform for servicing locomotives on westbound passenger trains. It will be noted that two employees are supplying fuel oil and water to the locomotive and that other employees are lubricating the main- and side-rod bearings with high-speed air-operated grease guns. Other operations performed include inspection of the locomotive, checking of

lubricating oil in driving and journal boxes, removal of carbon from firebox and replenishment of miscellaneous supplies. The locomotive is standing over an inspection pit which is provided with electric lights, and is of sufficient depth so the inspector can make underneath inspection standing in the pit. It requires an average of eight minutes for complete servicing of a locomotive at this station. The servicing time can be reduced to five minutes if necessary.

This passenger locomotive handled a train from Los Angeles, Calif., to Kansas City, Mo., a distance of 1,791 miles. Locomotives of this type operate on six daily trains (three westbound and three eastbound) between Kansas City and Los Angeles. Twelve different engine crews are required to handle one train between these points. Fuel oil is supplied en route six times westbound and five times eastbound and water supplied sixteen times in both directions. Enginehouse employees meet the locomotive at eleven intermediate terminals where engine crews change, to inspect and service the locomotive. The locomotives used on these long runs average from 13,000 to 14,700 miles per month per assigned locomotive, and 15,300 to 19,500 miles per month per active locomotive.

Railroads operating coal-burning locomotives on through passenger runs usually locate intermediate servicing facilities some distance from passenger stations to avoid the dust and dirt incident to the handling of coal and ashes. This involves extra stops for servicing. To reduce the delay to a minimum, coal docks have been designed and installed that deliver 42 tons of coal in 75 sec. The fast delivery of coal is accomplished by the use of a spout (called a bootleg) that swings lengthwise of the track. A hopper is installed underneath the track with



sufficient capacity to hold all of the ashes in the ash pan. Water is delivered at the rate of 3,500 gal. per min. The delivery of fuel and water and dumping of the ash pan is performed at one spotting of the locomotive.

### Servicing Freight Locomotives

Freight locomotives operating on long through runs usually do not use the servicing facilities installed for passenger locomotives. The general practice of handling freight locomotives at intermediate terminals where engine crews change, is to uncouple the locomotive from the train and bring it to the enginehouse for servicing and supplies. Servicing facilities should be located on tracks adjacent to or near the enginehouse where the locomotives can be moved to and from the trainyard with minimum delay.

Facilities for servicing freight locomotives should be designed so all servicing operations can be performed in the shortest possible time. A minimum of two servicing tracks should be provided and the facilities so arranged that locomotives can be serviced with one spot in either direction on both tracks.

An installation of high-speed servicing facilities at an intermediate terminal for oil-burning freight locomotives is shown in one of the illustrations. Water, fuel oil and sand are being furnished simultaneously. An oil-burning locomotive requires sand for cleaning flues in addition to rail sand. It will be noted that two sand spouts are provided so rail and flue sand can be supplied without moving the locomotive. Another illustration shows two locomotives being serviced simultaneously. These operate in freight service on through runs between Argentine (Kansas City), Kan., and Clovis, N. M., a distance of 637 miles, which is the longest through freight run on the Santa Fe. There are 25 locomotives of this class in this assignment and they are making 8,000 to 9,000 miles per month per assigned locomotive. It would not be possible to obtain such high mileage without the installation of these high-speed servicing facilities. Without them it would be necessary to relay the locomotives at two inter-

mediate terminals and this would necessitate keeping two relay locomotives at each of these two terminals or would require an assignment of 29 locomotives to make the same mileage now being made by 25 locomotives.

The cost of installing all the new servicing facilities between Argentine, Kan., and Clovis, N. M., was considerably less than the cost of one new locomotive. This emphasizes the importance of installing new servicing facilities or improving existing facilities when new locomotives are purchased.

## Santa Fe Improves Ticket Selling Technique

A system-wide revision of ticket selling routine to meet the challenge of war-time travel has recently been completed by the Atchison, Topeka & Santa Fe. The speeding up of ticket sales so that limited facilities could handle the maximum of customers with the least inconvenience to them was the objective at all stations, but at Chicago, Los Angeles, Cal., and Kansas City, Mo., where demands were exceptionally great, major changes were made. The program was started at Chicago in July, 1943, when information and reservation activities were segregated from the routine of selling and a new type of reservation rack was inaugurated. Since that time three of these racks have been installed at Los Angeles while at Kansas City, information, reservation and selling activities have been separated and a revolving rack has been installed. The changes made at Los Angeles and Kansas City were in close conformity to those made at Chicago.

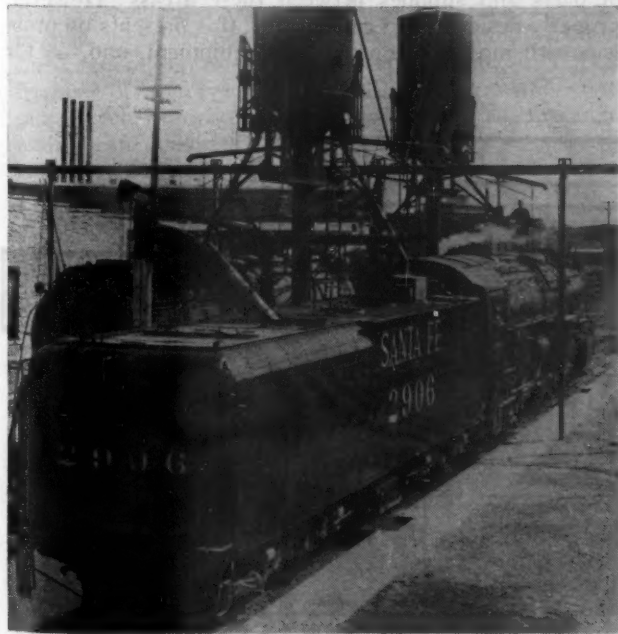
Under the new set-up at Chicago a new office at 80 Jackson boulevard handles all public telephone requests for information, all Pullman reservations and the diagrams of all trains departing from Chicago. The department is closely co-ordinated with the Dearborn station ticket office, the Santa Fe's city ticket office, hotel ticket offices and the military reservation bureau at Chicago. It also has direct teletype communication with the Santa Fe's New York and Los Angeles offices. This reservation department functions under T. N. Thompson, manager, and operates daily from 7 a. m. to midnight.

### Revolving Turret with 12 Clerks

The main feature of this office, as well as those at Los Angeles and Kansas City, is a revolving diagram turret around which 12 reservation clerks are able to use the same sets of diagrams with a minimum of interference from each other. The turret is divided into upper and lower portions which revolve independently of each other and each of these is divided into major sections, one for each Santa Fe train that leaves Chicago. Each train section is divided into 31 pigeon-holes, one for each day of the month. The lower turret contains the diagrams for all trains departing during the current month and the upper, those of trains departing during the following month.

Still another innovation in the handling of diagrams is the method of filing to bring about simplicity and availability. Under the system of filing now in effect the diagrams for all cars of each train for each day of the month are bound together and filed according to train and day. In addition, the covers for the cards of each

(Continued on page 728)



Fuel Oil, Water, Track Sand and Firebox Sand Being Delivered to Two Locomotives Simultaneously



# What Features in Diesel Shops?

Part I of this article dealt with the general features of facilities for effecting running maintenance and repairs, while this part deals primarily with combined running maintenance and heavy repair facilities

By H. B. Ellis,

Director of Service and Parts, Electro-Motive Division, General Motors Corporation

## PART II

IN the case of Diesel-electric locomotive shops intended for heavy repairs, the Electro-Motive Division of General Motors Corporation is of the belief that the shop on any road for this class of repairs should be combined with or located adjacent to a running maintenance shop, and has developed basic plans for a combination running maintenance and heavy repair shop, presented herewith as Figs. 3 and 4. The primary reasons for this arrangement are that it permits the consolidation of comparable phases of the work, and of some facilities, and that it permits greater flexibility in the operations of shopmen, who can be transferred from light maintenance work to heavy repair work, and vice versa, as conditions require, with minimum loss of time.

In the combination shop, the facilities recommended for light maintenance are essentially the same in scope and design as those already described in the separate light maintenance shop, but to these are added a higher crane bay with a locomotive repair track, and adequate ground-level shop areas for engine, generator and traction motor overhauling work. In the plan and cross section of the combination shop shown, the heavy repair bay is 50 ft. wide, and, in addition to the one locomotive repair track, houses the wheel or truck release and overhaul track, which would normally be located in the light maintenance section. In the heavy repair area, the floor level throughout is at top of rail level, and both tracks

have inspection and repair pits 4 ft. deep. In addition, the area is served throughout its full length by a 25-ton overhead traveling crane, which is used for the wide variety of heavy lifting operations required in this bay, including the lifting of entire engine units and generator assemblies to and from locomotives.

### Auxiliary Shop Areas

The areas set aside for engine, generator and traction motor work are shown at each side of a longitudinal center aisle in the rear half of the heavy repair bay, beyond the stubbed ends of the locomotive and truck overhaul tracks, and are, of course, subject to adjustment in size and arrangement to meet the conditions at any particular shop. Directly behind the heavy shop area, and at the higher level of the elevated platforms in the running maintenance section, is the storeroom, and contiguous to it, at the same floor level, are the separate areas for the cleaning and reconditioning of parts.

With the floors of all of these auxiliary areas at the level of the elevated platforms, approximately 4 ft. 8 in. above the general working level in the heavy repair shop, a trucking ramp, as shown, is required for the movement of parts and supplies between these areas. However, properly designed and constructed, this presents no problem with modern shop trucking equipment, and, on the

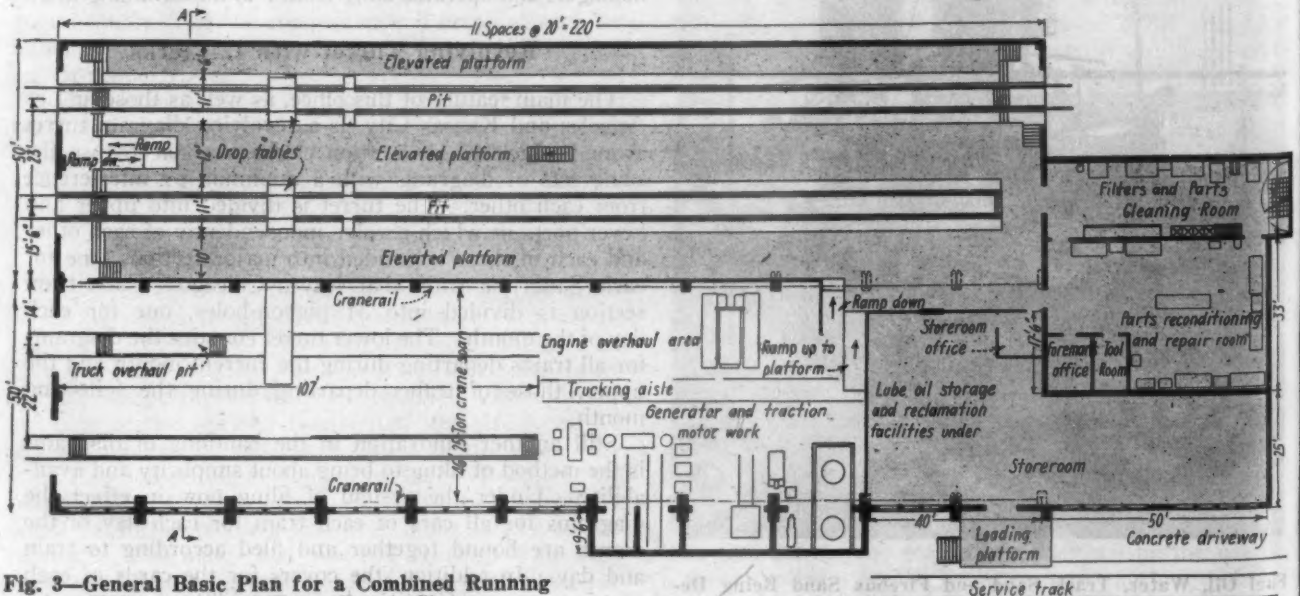


Fig. 3—General Basic Plan for a Combined Running Maintenance and Heavy Repair Shop

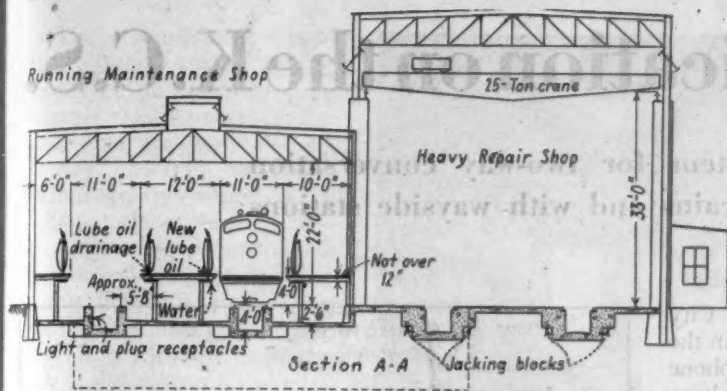


Fig. 4—Section A-A of the Combined Shop Shown in Fig. 3

other hand, preserves the highly desirable one-level arrangement of the elevated platforms in the running maintenance section and the auxiliary shop areas where the bulk of parts handling is carried on.

As in the case of the separate running maintenance shop, basements beneath the storeroom and parts cleaning and reconditioning rooms afford ideal areas for a central lubricating oil storage and reclamation plant, as well as for the storage of heavy parts, and for locker and toilet rooms, if desired. In some cases, however, it might be found more desirable, in the interest of the convenience and efficiency of shopmen, to locate the toilet and locker facilities on the upper floor level.

### Lighting, Heating, Ventilation

Other features of the plans suggested for both the running maintenance shop and the combined shop, are separate offices for the shop foreman and storekeeper, and the concrete driveway and supply track serving the storeroom. Still other features called for in any well-designed, efficient shop of either type are adequate lighting, heating and ventilation.

Window areas in the shop should provide for maximum light, fully diffused to break up the direct rays of the sun, while general artificial illumination should be of the overhead type, adequate to maximum efficiency in shop operations, and should afford minimum shadows. Such general lighting should be supplemented by lighting fixtures of approved type in all inspection and repair pits, directed upward against the underside of equipment, and by an adequate number of plug-in receptacles for extension-cord lighting. Furthermore, the shop interior should be painted a light color to improve lighting.

Heating throughout the shop areas should be as uniform as possible, which may be accomplished best by overhead unit heaters, supplemented by special blower or coil arrangements in the pits, where required, for the rapid thawing of snow and ice from the trucks and other running gear of locomotives during the winter, and thus simplify and speed up underside inspection and repair work.

To permit the ready removal of exhaust gases in the shop areas, especially where operations call for the running of engines in testing and break-in operations, some adequate form of ventilation must be supplied. This may be by any one of several different means, including side-wall ventilating sash and roof louvres, and exhaust jacks or hoods directly over the repair tracks. However, at points where any considerable running of engines is contemplated, consideration should be given to the provision of a separate exhaust system for each Diesel unit

location in the running maintenance section, which, through a series of exhaust ducts, will convey engine gases direct from the exhaust ports of the engine units to the atmosphere above the roof level. This type of system will result in the removal of a minimum amount of heat from the building.

### New Facilities Not Essential

Except for the fundamental features called for in regard to floor levels, elevated platforms, the relationship between various areas, etc., nothing contained in the foregoing discussion or the accompanying plans should be construed as arbitrary. In other words, only the basic ideas and features alone are to be considered as such—the size, type of construction, shop equipment to be installed, and such other matters being subject to wide fluctuation in the light of local operating conditions or the specific preferences of local mechanical and engineering department officers.

Furthermore, nothing in the foregoing discussion or plans is intended to imply the essentiality of newly constructed facilities to the efficient maintenance and repair of Diesel power. On the contrary, it is recognized that many existing shop buildings on the railways, including some enginehouses, lend themselves readily to conversion for Diesel maintenance and repair work, and can be made as fully effective as new facilities for carrying out the various classes of work required, if the essential features suggested are incorporated in them.

That the value of the various considerations pointed out in the foregoing is not theoretical, but tangible and practicable, is seen in the fact that, in Diesel maintenance and repair shops in which they have already been incorporated upon the suggestion of Electro-Motive service engineers, the physical effort required by shopmen has been reduced materially, the damage to parts in handling has been minimized, efficiency has shown large improvement, and locomotives are being turned in as much as 50 per cent less time than was possible under former conditions.

\* \* \*



Playroom of the Pennsylvania's 30th Street Nursery, in Philadelphia, Has for Its Wall Décor a Railroad Motif—Like the P. R. R.'s Other Nursery in New York, It Is Vastly Popular with Travelers Seeking a Temporary Spot to "Park" Their Youngsters



# Train Communication on the K.C.S.

**Carrier telephone system for two-way conversation  
head-end to rear of trains and with wayside stations**

**D**URING the last ten months, the Kansas City Southern has made extensive tests and aided in the development of a carrier type two-way telephone train communication system. Most of the tests have been made with equipment on one freight locomotive and one caboose in connection with wayside stations at East Yard in Kansas City, Mo., at the dispatcher's office in Pittsburg, Kan., and at three intermediate offices at Grandview, Mo., Tiger and Drexel. Engineers of Aircraft Accessories Corporation, Kansas City, designed the equipment and developed its application to the Kansas City Southern.

Subject to obtaining priorities from the War Production Board and permission from the Federal Communications Commission, the railroad has entered into an agreement with Aircraft Accessories Corporation to purchase 22 wayside station sets and enough mobile sets for use on locomotives and cabooses to operate four trains continuously. The plan is to install the wayside sets at the stations shown on the accompanying map on the 560 miles of line between Kansas City, Mo., and Shreveport, La. After the benefits of these initial installations have been demonstrated, the plan is to equip the remainder of locomotives and cabooses used in road freight service on this territory.

Beyond Shreveport, the K. C. S. extends south 228 miles to the gulf ports, Beaumont, Tex., and Port Arthur, Tex. Also from Shreveport the associated line, the Louisiana & Arkansas, extends west 222 miles to Dallas, Tex., and southeast 312 miles to New Orleans, La. The



**Map Showing Location of Wayside Stations Between Kansas City and Shreveport to Be Equipped for Communication with Trains**



**Conductor in the Caboose Using Train Telephone to Talk to the Engineman**

traffic to and from these three lines is handled over one single-track line between Shreveport and Kansas City, and, therefore, the train communication is planned for this territory first as an aid in increasing track capacity and expediting train movements.

Although telephone apparatus is in service for transmission of train orders on the lines between Shreveport and New Orleans, as well as between Shreveport and Port Arthur, the Morse telegraph is still used for train orders north of Shreveport. This is an additional reason for applying the telephone train communication system on the Kansas City-Shreveport territory first, because the system supplies an additional circuit for two-way telephone conversation, by carrier, between the dispatcher's office and the principal stations on the line.



The communication system is of the carrier induction type in which the previously existing wires on the pole line are used also to "carry" the train communication energy which is at 170 kilocycles carrier frequency, using narrow band frequency modulation with unity deviation ratio. The carrier frequency does not interfere with the ordinary use of the telegraph and telephone service on the line wires. This use of the line wires permits the operation of low power sending sets on the locomotives, cabooses and in the wayside offices. As a result the energy which goes no more than a few hundred feet beyond or outside the railroad right-of-way is less than the limit for which the Federal Communications Commission regulations require an assignment of radio wave length.

Ordinarily the pole line is about 50 ft. from the track, and where the ground is practically level, the line wires are about 15 to 20 ft. above the level of the rails. In rough mountainous terrain in Arkansas, the pole line may be as much as 100 ft. distance from the track, and the line wires may be 50 ft. or more above or below the level of the tracks. The train communication equipment is designed to operate satisfactorily with the line wires up to 200 ft. distance, and 50 ft. above or below the level of the track.

Throughout the Kansas City-Shreveport territory, this pole line has a minimum of four line wires. Two No. 9 copper wires are used as a message telephone circuit, with 85 telephones at various stations along the line. Two No. 8 iron wires are each used to provide telegraph circuits. On the two copper wires, there are in operation five carrier channels using equipment manufactured by the Communication Equipment & Engineering Company of Chicago, one for telephone use which operates at frequencies of 9 and 18 kilocycles, and four for telegraph use which are operated at frequencies ranging from 4.5 to 20 kilocycles. A simplex circuit is also derived from the copper wires. In addition to all these services, the 170-kilocycle carrier for the telephone train communication system is superimposed on these wires. At the wayside offices one terminal of the equipment is connected to the ground and the other is connected through appropriate filter to two of the overhead line wires.

#### Antenna on the Mobile Units

The antenna on the locomotive consists of 12 turns of wire, 4 ft. high and 6 ft. long in a vertical plane, with the greater dimension in the direction of travel. On the caboose, the antenna consists of four turns of wire encircling the outside of the car in the direction of travel.

When transmitting from a mobile unit as, for example, the locomotive of a train, 170-kilocycle energy is applied to the antenna to create a magnetic field which cuts or links with the line wires on the pole line, thereby inducing



Locomotive Engineman Using Train Telephone to Talk to Conductor

in the wayside wires the 170-kilocycle energy which is carried along the wires to be picked up by the antenna on the caboose. In this operation the gap between the wires of the pole line and the mobile units is bridged inductively in two instances, and these losses, together with the slight loss along the line wires, require up to 50 watts output for a range of up to 10 miles when transmitting from one train to another train, or from head to rear end of one train.

When transmitting from a wayside office to a locomotive or caboose there is only one gap between the pole line wires and the antenna on the vehicles to be bridged inductively, and therefore only 3 to 6 watts power output is required at the wayside stations for communication with locomotives or cabooses on moving trains up to a maximum distance of 25 miles under adverse weather conditions.

#### Electronic Apparatus

The wayside offices should be spaced not more than 40 to 50 miles apart, thereby making the maximum distance from a mobile unit to a wayside office 20 to 25 miles. The 20 offices on the 560 miles between Kansas City and Shreveport are at the towns shown on the map. The dispatcher at Pittsburg handles the 236-mile territory between Kansas City and Watts, Okla. The dispatcher at Heavener, Okla., handles the 197 miles between Watts and De Queen, Ark., and the dispatcher at Shreveport handles the 125 miles between De Queen and Shreveport, in addition to 110 miles beyond.

In this two-way telephone train communication system, the sets of electronic apparatus on the locomotives, cabooses and at wayside stations each include sending as well as receiving equipment designed to operate at 170 kilocycles. The receiver has a sensitivity of approximately 100 microvolts and an audio output of 1 watt (6 watts in mobile equipment). All equipment is designed for

(Continued on page 729)

# Ex Parte 148 Submitted to I.C.C.

Commission expected to decide case by mid-December,  
since present suspension order runs only to year end

WASHINGTON, D. C.

**C**ONCLUSION of the oral argument on November 3 brought to a close the Interstate Commerce Commission's public hearings in the reopened Ex Parte 148 proceeding where the railroads are seeking reinstatement on next January 1 of the freight rate increases, amounting to about 4.7 per cent, which were originally authorized in the proceeding but suspended since May 15, 1943. The commission is expected to decide the case by mid-December, since the present suspension order on the increases runs only to December 31.

The railroad argument, opened by John Dickinson, general counsel of the Pennsylvania, as reported in the *Railway Age* of November 4, page 691, was concluded by J. M. Souby, general solicitor of the Association of American Railroads. Messrs. Dickinson and Souby also made brief arguments in rebuttal after counsel for other parties had been heard.

## Railroad Proposals Called Modest

In his main argument Mr. Souby stated that, in asking relief in the form of the reinstated increases, the railroads were following the behavior pattern of industry generally—only their proposals were more modest. He added that it would be difficult to find any item in the cost of living index, other than railroad transportation, which had actually gone down during the past two years.

The A. A. R. general solicitor went on to cite from the record data on wartime increases in railroad labor and materials costs, which have come "in spite of all efforts" of the Office of Price Administration. The O. P. A. is spearheading the opposition to reinstatement of the freight rate increases, and is seeking also the revocation of the passenger fare increase which has remained in effect since early in 1942. But in pointing out how railroad costs have increased, Mr. Souby intended no reflection on O. P. A., which he thought had done a good job all things considered. Nevertheless, he insisted, the increased costs are here; and only the high and continually rising volume of both freight and passenger traffic has enabled the railroads to come out as well as they have thus far.

He saw in the present proceeding a parallel to the Fifteen Per Cent Case of 1917, wherein, he recalled, the commission authorized increases for eastern railroads just after the country entered World War I, and at a time when traffic was increasing. It did so, as Mr. Souby put it, because it was fixing rates for the future and not for the past. And while earnings of the moment appeared adequate, the relief was granted because the commission found a trend indicating that the adequate-earnings period would not last very long. Now, the A. A. R. general solicitor went on, the trend toward lower net earnings has already set in; and the carriers have every reason to believe that traffic will reach its peak by the end of this year and is bound to drop off substantially thereafter.

Mr. Souby was followed by Roland Rice, general counsel of American Trucking Association, Inc., who sup-

ported the railroad request for additional revenue, with special emphasis on the trucking industry's view that the best way to get such additional revenue would be through increased rates on less-than-carload traffic—the "life blood" of the truckers, who contend that the railroads now handle such business at a substantial out-of-pocket loss. Lieutenant-Colonel Thomas E. Sands, Jr., spoke briefly to point up the War Department's request (in the event of cancelation or further postponement of the increases) for application of the order to all published tariff rates. The present suspension order has permitted continuance of the increases on special "emergency" rates published at the request of government agencies. The War Department had no request to make in the event of restoration, and it took no position either for or against such action.

F. G. Hamley, assistant general solicitor of the National Association of Railroad and Utilities Commissioners, spoke for 28 state commissions and the Southeastern Association of Railroad and Utilities Commissioners in urging that the freight rate increases be canceled. The commission's action reopening the proceeding followed upon the National Association's petition for permanent cancelation. Mr. Hamley looked over the financial situation of the railroads and found it "most healthy." He criticized estimates as to an unfavorable outlook upon which the railroad presentation was based. The present set-up of the proceeding, he went on, practically invites the carriers to seek increases, adding that, if further suspension instead of cancelation is the commission's decision, it will amount to an invitation to the carriers to return again. If the rates are canceled, Mr. Hamley suggested, the railroads will wait until there is a present need for relief. John E. Benton, general solicitor of the National Association, argued the position of the Southeastern Association and the separate stand of the Alabama, North Carolina, Tennessee and Kentucky commissions in favor of revocation of the passenger-fare increase.

## Swiren Argues O. P. A. Case

Max Swiren, special counsel for O. P. A., characterized the railroad position as "a public manifestation of a rather dangerous undercurrent which if not checked may well imperil the war effort on the home front." He referred to "the let-down that grows out of the conviction that the end of the European phase of the war is in sight, and that now it is safe for us, as individuals and corporations, to divert our attention and our energy to personal profits and personal advantages." The fact that the country is still at war, Mr. Swiren insisted, "must dominate the determination of the issues in this case"; for the "hold-the-line" policy "is still in effect," and economic stabilization is "vitally important" for the conversion period as well as for wartime.

Recalling the "inflation we experienced following the last war," the O. P. A. lawyer charged that the railroad attitude disregards that "bitter experience." In the judgment of O. P. A., Mr. Swiren went on, the war-



time profits of the railroads have been "exorbitant," and "they are continuing on a level that must be characterized at least as liberal, and all reasonable outlooks for the immediate future indicate that a liberal level of railroad revenues and earnings will continue." As Mr. Swiren framed his charges at another point, the railroads have indulged in a "psychology of fear," for the "deliberate purpose of getting additional wartime profits." He is satisfied that the fears are "phony," conjured up for the "grasping purpose of further war profiteering."

### Likes Net-Before-Taxes Figure

On the matter of the net income figure which the commission should consider, Mr. Swiren argued for O. P. A.'s preference—the net income before federal taxes. The railroads, he said, should not be permitted to transfer the burden of war taxation to shippers and consumers, and he cited various pronouncements of the courts and regulatory bodies on the point. In his final summation, however, Mr. Swiren gave a little, saying the comparison of wartime earnings of the railroads with their peacetime earnings "at best" should be made after only the normal tax of 24 per cent. Even on the latter basis, he insisted, the railroad earnings reach "shocking levels, shocking in the light of the fact that we are engaged in what the late Commissioner Eastman described as the most terrible war in history."

Commissioner Aitchison confessed that he was "shocked" when he found in the O. P. A. presentation a statement using as a base for normal railroad earnings the 1936-1939 period which showed "\$90 million net railway operating income plus interest, a figure which obviously was confiscatory." Mr. Swiren asked the commissioner "in fairness" to recall that O. P. A. suggested that, in determining the normal for railroad earnings, the commission should "come closer to the early 'Forties" than to the 1936-1939 figure which had been shown merely because Congress had used those years as a normal peacetime period. Commissioner Aitchison replied that the 1936-1939 figure had been publicized throughout the country.

On the O. P. A. demand for revocation of the passenger fare increase, Mr. Swiren said that the cut would still leave the carriers with a "much more favorable passenger operating ratio than they ever enjoyed in peacetime." Commissioner Aitchison asked if it were the O. P. A. position that passenger losses should be made up out of freight revenues; and Mr. Swiren replied that war is not the time for "reversing peacetime practices." He added that the railroad passenger is now "getting inferior service for higher prices," although he conceded that this is no fault of the carriers who have done a good job of accommodating wartime travelers.

### N. I. T. League Walks "Middle Line"

John S. Burchmore made the National Industrial Traffic League's argument in favor of suspension of the increases for another six months period. He opposed permanent cancellation at this time, contending that the commission should keep itself in a position to act promptly if the need for prompt action arises in the future. Among other things, Mr. Burchmore pointed out that Congress may give the railroads substantial relief before the end of the year by final enactment of the House-approved bill for repeal of remaining provisions of the land-grant-rate law. Thus, as he put it, the N. I. T. League, at this time, "is distinctly walking a middle line."

J. K. Knudsen of the Department of Agriculture and War Food Administration, asked the commission not

to allow what he called the "controversy" regarding the appearance of government agencies in the proceeding to obscure the "real parties in interest," whom Mr. Knudsen identified as "the American public." He asserted that the appearance of government agencies should not be regarded as "intrusive," although he assured Commissioner Aitchison that he had seen no evidence of such an attitude on the part of the commission—the railroad case "implied" it on the part of the carriers.

It is the net conclusion of the Department of Agriculture and W. F. A., Mr. Knudsen went on, that agricultural production will remain at a high level in 1945 and for "an unpredictable time thereafter." Thus he argued that, so far as this traffic is concerned, there would seem to be no need for restoring the increases. As he appraised the outlook generally for the period of conversion, the most that a "pessimist" can foresee is a "temporary lag"; and he doesn't think the railroads should be given "premium prices" to carry them over a "temporary slack" when other industries and agriculture, he said, must pull through without such relief.

### Railroad Rebuttal

Interspersed among the foregoing arguments were some 10 or 12 others from counsel representing various individual shipper groups, state commissions, and commercial organizations. The railroad rebuttal argument was opened by A. A. R. General Solicitor Souby who asserted that the carriers had shown that any reduction in traffic next year will result in a severe reduction in net. And their expectations that traffic will fall off recognize the "common thought of the time" that the war in Europe will end this year or a few months thereafter.

Commenting on the O. P. A. demand for revocation of the passenger fare increase, Mr. Souby recalled that the price agency's interest in low-cost rail travel was not manifest when Congress was increasing the fare tax from 10 per cent to 15 per cent. He also addressed himself to the manner in which he thinks the commission should consider wartime federal taxes. Excess profits taxes, he insisted, are as much a cost of providing services as are any other taxes or costs. He added that if the commission had inaugurated with the first income tax law a policy of disregarding income taxes in fixing railroad rates, it would find that the factor it was disregarding had grown from one per cent to 40 per cent of the net before taxes. Is it conceivable, Mr. Souby then asked, that earnings adequate when taxed at one per cent would remain adequate when the tax became 40 per cent?

Concluding the railroads' rebuttal argument, General Counsel Dickinson of the P. R. R. asserted his belief that the carriers had presented "proof that is adequate and appropriate for the kind of sound business judgment that the commission is here called upon to make, by showing from the testimony of seasoned and experienced witnesses that the need is present and that to wait is to court danger." Additional reasons why "now is the proper time" were set up by Mr. Dickinson as follows: The proposed increase, not quite restoring ton-mile earnings to the 1939 level, would be "so minute that it would not cause a ripple in the price structure and would be absorbed without the slightest inflationary effect"; delay until the curves have turned downward will bring the railroads back at a time when they will be told that "a period of declining economic activity is not the time to raise prices and rates"; and only if the railroads are assured now of the opportunity to earn adequate income can they take steps toward making their



expected contribution to the general economy in the conversion and post-war periods.

### Not Seeking to Recoup Past Losses

Mr. Dickinson denied the O. P. A. charge that the railroads are seeking to recoup past losses out of war-time earnings. At the same time he asserted the right of the carriers to realize, within the limits of fair and reasonable rates, sufficient revenues to provide for the industry's requirements of the immediate future. "It is sound policy to let us do so," the P. R. R. general counsel added.

He went on to set up a second O. P. A. contention as one holding that, if an economic lag comes, the carriers ought to be required "to operate at a loss with the aid of government subsidies in the form of tax refunds until better times turn up." Although this proposition was urged "as a necessary consequence of the principle of high volume production at low levels of profits," Mr. Dickinson appraised it as "a complete perversion of that principle." He asked how high levels of production could ever be attained "if large industries like the railroads are compelled to operate at a loss." O. P. A. objections to "throwing the cost of capital on the users of the service," he added, is "directly contrary to this commission's policy of requiring debt reduction out of earnings."

The P. R. R. general counsel closed his rebuttal argument as he had begun his main argument—"on the great simple elementary economic fact, that there is no substitute for solvency and that solvency is all important."

## Santa Fe Ticket Selling

(Continued from page 721)

train are given a distinctive color to prevent misplacement. This arrangement is a departure from the old practice of binding diagrams according to cars. Under the new method of binding the diagrams by trains, there are 620 train-diagram-files while previously there were only 100 car-diagram files. Binding by train increases the number of files and thereby increases availability with the result that the time spent waiting for the return of a file has been reduced and the sale of transportation speeded up. In addition, since the train-diagram-file shows all types of accommodation on the train, the reservation clerk can suggest substitute space, if that asked for is not available, without taking time to search for another file as was necessary when diagrams were bound according to cars.

When a public request for space is received at the switchboard, the operator transfers the call to one of the unoccupied positions at the turret, using a signal that is heard through clerks' earphones which are at all times connected with the switchboard. The clerk, after taking the request, revolves the diagram rack to the section containing the cards for the desired train and pulls out the cards for the date requested. After recording the name of the reserver and the clerk's number in the proper space on the car diagram, the cards are returned to the proper pigeon-hole. Calls from the salesmen in the city ticket office, where diagrams were formerly kept, and Dearborn station, hotel ticket offices and the military reservation bureau are handled in the same manner. When the clerk has fulfilled the request, she so indicates to the switchboard operator by pressing a button which lights a light on the switchboard.



Santa Fe Photos

**The Revolving Diagram Rack—Train Numbers, in Order of Departure from Chicago, Appear on the Two Movable Portions of the Turret, While Numbers Assigned to Clerks Are on the Stationary Base**

Supplementing the reservation rack is a battery of desks to which the switchboard operator transfers all telephone calls for information regarding trains, fares and routes. This arrangement further relieves the city ticket office which formerly supplied the information. The clerks at the information desk supply all data regarding routes, fares and schedules and, if a reservation is to be made, transfer the customers to the reservation rack. The purchase of tickets is completed by the customer in a ticket office.

Another desk handles all unusual requests by Santa Fe representatives; a fourth, requests for Santa Fe space by other railroads; and a fifth, requests by Santa Fe representatives for space on other railroads. Four telephone machines, two connected with the Santa Fe's New



**The Information Desk—Clerks Answer All Questions Pertaining to Schedules, Fares and Routing, Thereby Enabling Salesmen in the City Ticket Office to Devote More Time to Selling Tickets**

York office and two with its Los Angeles office, transmit requests for space and other information between Chicago and these cities.

Coincident with the removal of the reservation and information desks from the city ticket office, a number system was established at the latter office to determine the order in which customers are to be taken care of. This system has also been established at Los Angeles, Kansas City and other large offices. A sign, several feet above the counter, directs the customer to "secure a numbered card from the box beneath this fixture that we may serve you in an orderly manner." A note on the card reads, "Hold this card until the number is called. Its purpose is to assure Santa Fe patrons fair and reasonably prompt attention by serving everyone in his proper turn." When the ticket seller locates the customer next in order, he places the card surrendered by the customer upon a rack behind the counter so that other ticket sellers can determine from a distance the next number to be called. The card system was first employed during the busy period when it is impossible to take care of customers as they appear but recently it has been in effect continuously. Under the system at Chicago, 13 salesmen and 4 passenger agents are able to wait upon about 350 persons a day and customers are content to sit on davenport and chairs, knowing that their turns are secure and that they do not have to exert any effort to prevent encroachment by another customer.

#### **Sales on a Recent Thursday**

The functioning of the system is indicated by observations made on a recent Thursday. At 11:40 a. m. card No. 79 had just been drawn and a ticket seller was calling for card No. 73. Six persons were waiting. Twenty minutes later, card No. 91 was drawn and No. 88 was being called. Twelve more persons had entered the office, 15 had been waited upon and 3 were waiting. At 4 p. m., card No. 223 was being drawn and No. 213 was being called. Ten persons were waiting. During the 4½ hr. from 11:40 a. m. to 4 p. m., 134 persons had been waited upon by 9 ticket sellers at the rate of about 4½ per hour per ticket seller.

To conserve further the time of ticket sellers and customers an advance or will call desk with two clerks was set up. Customers who have a reservation may, four hours after requesting their tickets, call at this desk without waiting in line.

#### **Change Made in 22 Days**

The original plans for establishing the new reservation office called for completion on October 1, 1943, but due to exceptionally heavy business it was decided, on July 26, 1943, to advance the date to August 16, 1943. During the ensuing 21 days, the revolving diagram rack was designed by the railroad's architect and constructed at the Santa Fe's shop at Topeka, Kan., inexperienced girls were trained and equipment was installed. Since July 26, 1943, other inexperienced girls have been trained, making the total employed in the reservation-information office 53 including a manager, an assistant manager, supervisors and clerks.

The selection and training of girls was handled in an unusual manner. After capable girls were selected, a two-week training period was established, which consisted of lectures and instruction to familiarize the girls with the railroad's service and the details of ticket selling. During the early period of training, adaptability was observed and the girls were classified as reservation or information

clerks. They were then given specialized training which included working with a reservation or information clerk and a final test. This test was made a few days prior to the opening of the new office when, on an evening after the rush was ended, they were placed at the reservation and information desks in the city ticket office and told they were on their own. Experienced clerks were kept on hand during the remaining period of the training to assist the new girls. As a result of this training, the new girls were sufficiently trained to take over the duties of the new office when it was placed in operation.

The new arrangement has relieved the city ticket offices to a large degree. Previously, for example, the Chicago office received wires for space at the rate of 1,700 to 3,000 per day while telephone calls averaged 1,300. In addition, many patrons stormed the ticket counter from morning until night. Now confusion and delay are at a minimum.

## **Train Communication**

*(Continued from page 725)*

frequency modulation with a deviation ratio of unity. The audio response is practically uniform from 200 to 3,000 cycles. The transmitter, also frequency modulated, is the oscillator-amplifier type. The sending and receiving sets for use on the locomotives and cabooses are similar to those used at wayside stations except for shock mounting and for the power output rating.

On the locomotives and cabooses, as well as at the wayside stations, the receiver apparatus is normally in operation and is connected to a loudspeaker, which in effect is used only as a calling device. A hand-set, combining transmitter and receiver, is normally hung on a hook-switch. If the conductor in the caboose, for example, hears a call for him coming in on the loudspeaker he removes his hand-set from the hook-switch. This cuts out the loudspeaker and cuts in the receiver on the hand-set. When he is ready to talk, he operates a small push button on the hand-set which cuts in the transmitter and cuts out the receiver in his hand-set. In order to minimize confusion, the volume control on the loudspeakers in the cabooses and on the locomotives is adjusted to bring in calls only from the nearest wayside stations.

#### **Uses for Train Communication**

On the Kansas City-Shreveport territory train movements are authorized by timetable and train orders. Automatic block signal protection has been in service for 19 years on 14 miles of single track between Oskaloosa, Mo., and Pittsburg, Kan., and materials have been ordered for automatic signaling on 35 miles between Gulfton, Mo., and McElhany. It is not the intention of the railroad to use the proposed train communication system to change the present practices for authorizing train movements. On the other hand, the new communication will provide supplemental information which, in the opinion of the management, will minimize train delays in numerous instances on each trip, and thus get the trains over the road in less over-all time between terminals, thereby improving service to the public and increasing the efficiency of existing track facilities, cars and locomotives, as well as reducing overtime.

During the numerous trips when the train communication has been in test service on certain freight trains in the past 10 months, various instances in which train time has been saved have been noted. For example when making up a train in the yard at Kansas City the engineman



and conductor can use the telephone when pumping up the train line and testing the air, as well as for the conductor to give the engineman a verbal high-ball to depart. If the conductor or trainman at the rear note any dragging equipment or a hot-box, the train telephone can be used to tell the engineman to stop the train. Otherwise the conductor would have to pull the air at the caboose which might result in pulling the train in two. In any instance when the engineman makes an unexpected stop he can use the telephone to inform the conductor of the reason. Either when the train is stopped or in motion, the conductor or engineman can inform the operator at the nearest wayside office concerning progress being made by the train or to explain any unusual delays. The operator in turn passes this information on to the dispatcher who may find it desirable to change orders to other trains, or to put out information to all concerned regarding special causes for certain trains being delayed.

### Half Million for Complete Installation

Considering the Kansas City Southern and the Louisiana & Arkansas Lines as a whole, the management estimates that a complete installation, including 65 wayside offices and 270 mobile units, would cost about \$500,000. Maintenance, replacements, depreciation and obsolescence is figured as 20 per cent of the original cost annually, so that there would be an annual charge of about \$100,000, which would easily be justified by the benefits of the train communication.

In 1943 the railroad paid \$1,780,000 for per diem hire of freight cars, and over \$500,000 for overtime and constructive allowances to freight train crews, totaling \$2,280,000 of which the \$100,000 is less than 5 per cent. The management is of the opinion that, by minimizing long delays on extra freight trains, the expenditures mentioned above can be reduced more than \$100,000 annually.

## New Book . . .

*The Control of Germany and Japan*, by Harold G. Moulton and Louis Marlio. 116 pages. 9¼ by 6 in. Bound in cloth. Published by the Brookings Institution, Washington 6, D. C. Price, \$2.00.

Dealing with a subject that is out of all proportion to its admirably compact size—and one that already is a matter for front page newspaper consideration and obviously is to grow in importance as the formulation of a basis for an enduring peace after this war becomes a current, rather than a future, problem—this slender book undertakes a comprehensive analysis of the means which the rest of the world can employ to protect itself against future aspirations of the nations that now wear the brand of "aggressor."

The authors are the president of the Brookings Institution, Dr. Moulton, and a distinguished member of its staff, Dr. Louis Marlio, an economist and writer, member of the French Academy, former chairman of the international aluminum cartel, chairman of the Railway Committee of the International Chamber of Commerce, and from 1920 to 1939 chairman of the French Eastern Railways. The book already has had wide distribution, since all members of the Book-of-the-Month Club have received it, in pamphlet form, with the compliments of that organization.

Using language so succinct that the presentation is almost as concise, and as precisely organized, as an outline, the authors have undertaken to review the various proposals that have been made to prevent a renewal in Germany and Japan of the military power upon which their aggressive policies and practices have been based, on the premise that there can be no assurance of peace if these nations are to be allowed to recover their power to make war. The proposals that are examined fall into two main categories, economic controls and military controls, and their

effectiveness as applied to Germany and to Japan is assayed with scientific care and sober reasoning.

The book first takes up plans for territorial readjustments—partitioning Germany and depriving Japan of colonies—and reaches the conclusion that the former would be self-defeating because its economic consequences, if allowed to materialize, would be powerfully felt in other countries, and that the latter, though desirable, would be insufficient without applying some kind of controls to Japan proper. Plans to destroy or decimate the industrial capacity of these countries would not be practicable, it asserts, again because other nations would be seriously affected by resulting dislocations of international trade and by the creation of large populations lacking means of self-support.

### Various Weaknesses in Controls

Practical disadvantages to other proposed economic measures are set forth with equal precision, particularly as applied to Germany. These include establishing financial controls over the industry of the aggressor nations or import controls over vital minerals, destroying essential basic industries, decentralizing certain key industries, banning the initiation or expansion of various synthetic manufactures, prohibiting civil aviation, unifying the continental railway system, and restricting electric power consumption. As to all of these ideas, the authors' conclusion is that "any general system of economic control, to be effective, would have to be so comprehensive in scope and so disruptive economically that it would undermine world economic prosperity and thus work against enduring peace." Some merit is seen in some of the proposals for direct control of specific industries, however, for example, aluminum, petroleum, aviation, and electric power, but opportunity to evade the controls would exist, it is suggested.

Economic measures are further limited by three other factors, according to the authors. These are: (1) The nations that would be responsible for making economic controls effective do not themselves have the same economic interests, so leniency, compromise, and appeasement would be introduced as dictated by national self-interest; (2) the nations responsible for enforcement would weary of the expensive and unrelenting vigilance that successful enforcement would require; and (3) any general system of centralized economic control of some nations would almost inevitably be fatal to the survival of private enterprise in all nations.

Having thus pointed out various weaknesses in possible economic controls, the authors take up the alternative of military controls, in which they see the only possible solution to the problem of preventing the aggressor nations from recovering their power to upset the peace. They would supplement these military measures with certain economic controls, however, to the extent that they would, in their opinion, have a place in the general scheme of control. Such limited economic measures would be relatively simple to administer, and their preventive character would ease the difficulty of maintaining effective military control, it is suggested.

### Practical Economic Controls

*Restriction or suppression of the civil aviation industry, close control of aluminum fabrication and petroleum production, and, as to Germany, supervision of electric power distribution* are proposed as economic controls that could be practically applied along with the military controls. In the latter category the authors examine the questions of disarmament and of prevention of rearmament, and continue with a discussion of objections that may be offered to the use of military force to maintain peace. It is not argued that universal peace necessarily would result from these measures, but it is asserted that destruction of the military power of Germany and Japan and unrelenting policing of their power for war for at least a generation would be an essential first step toward that end.

In a final brief chapter Dr. Moulton has examined the two alternatives which the United States faces in connection with this matter. Collaboration with other nations in preventing the rearmament of the two aggressor countries, or maintenance of an adequate independent system of defense. Only in the first alternative, it is argued, can this country find a way to maintain its national independence and to preserve its system of free enterprise.



# Railroads-in-War News

## N. Y. C. Battalion Builds Own Trains

Has been cited also with bronze star for its part in the French campaign

Since mid-August, when the outfit moved into the wrecked yards at Faligny to take over its first job in France, a New York Central railway operating battalion "has compiled an enviable record of operation," according to word received from Headquarters, European Theater of Operations.

Recently cited with the bronze star for its part in the French campaign, this battalion had taken over its assignment in that theater after only a brief stay in the United Kingdom, and without previous experience gained by other railway units, many of which had trained in the British Isles for as long as 1½ years. It is said that "through sheer grit and determination and untold hardships," the outfit cleared wrecked yards and repaired salvaged equipment and partially destroyed shop machinery as best they could with the limited tools at their command. Once, after a main-line track had been laid through the yards at Le Mans, the N. Y. C. railroaders brought in the first American train, described as "perhaps the oddest train ever to enter any railroad station." The consist was a French locomotive (actually an American steam engine brought to France in World War I), French freight cars, newly-arrived American freight cars, and abandoned German and Italian rolling stock. More recently, the operating company of this battalion has been under constant strafing and bombing attack, hazardous because so much of its tonnage has been ammunition and gasoline.

The battalion, under the command of Major Robert A. Wright, Johnstown, Pa., is now constructing four trains, from French, Italian, and German coaches and freight cars. These will enable the entire battalion to move on a moment's notice to any sector. Headquarters' train will include an office car, mess, latrine and shower cars and sleeping accommodations for officers and enlisted clerks and non-commissioned officers working in the front office. Battalion business will proceed as usual while the train is on the move.

Maintenance of Way Company "A" has recently completed its entire train of 28 cars, and companies B and C will construct similar trains along the same plan. Consist of the "A" train includes: Offices and quarters for the officers, as well as officers' mess, built from a French passenger coach; office coach, including drafting room, orderly room and mail room, with quarters for the car personnel; the mess car, which

with six cooks prepares hot meals for the crews on three 8-hr. shifts; company supply car; combination company and mess supply car; motor car repair shop, fully equipped with tools to make repairs on the line to motor cars and other equipment used by the maintenance of way forces; combination track supply and ammunition unit; signal cars; bridge and building car, with a crew of 18; shower car, latrine car, German-built gondolas and flat cars (French and Italian gondolas and flat cars were found inferior to the German), box cars and sleeping cars for enlisted personnel.

Company "B" is constructing a shop on wheels, called a "vast improvement over the mobile units used by American railroaders in England and when they first landed in France." There will be eight cars, and all equipment, except the cars will be standard American-made machinery. There will be a welding and electrical car; power car complete with generator to furnish lights and operating power for the entire train; machine shop; blacksmith shop; excess materials car; tool car; car shop tool car; carpenter shop and gondola car complete with two air compressors. Also attached to the train will be sleeping cars for officers and enlisted men.

"C" Company, the operating section of the battalion, is to operate from a 23-car train, including latrine, mess and shower cars, and quarters for officers and enlisted personnel, comprising engineers, conductors, firemen, switchmen, brakemen, dispatchers, trainmasters and flagmen.

Activated in December, 1943, the N. Y. C. battalion completed its early military training at Houston and Camp Bullis, Tex., and later at Camp Claiborne, La., receiving its technical training on the U. S. Army Railroad, the Claiborne & Polk.

## N. Y. Railroad Club to Hear of Railroading Overseas

Brig. Gen. Andrew F. McIntyre, chief, Rail division, Army Service Forces, Washington, D. C., will address the New York Railroad Club when this group meets November 16, 7:45 p.m., in the auditorium, Engineering Societies Building, 33 West 39th Street, New York. General McIntyre, who before the war was superintendent of passenger traffic, Eastern region, Pennsylvania Railroad, will talk on "Overseas Activities of U. S. Military Railway Service Operating Battalions."

A new film, to be released at this meeting, will depict scenes of M. R. S. operation and maintenance, in various locations overseas. Major William J. Crabbs, mechanical engineer in the headquarters of Brig. Gen. Carl R. Gray, Jr., and now recently returned to this country, will relate experiences of individual contacts in the war theaters.

## Cites Magnitude of War Transport Job

General Gross, in presenting "E" to Union Switch, reveals accomplishments

On November 3, the Army-Navy "E" Award was presented to the men and women of the Union Switch & Signal Co. at the plant in Swissvale, Pa. W. H. Cadwallader, vice-president and general manager, made the welcoming address. Major General Charles P. Gross, U. S. A., Chief of Transportation, Army Service Forces, presented the Army-Navy "E" Award, which was officially accepted by G. A. Blackmore, president and chairman of the board of the company. The Army-Navy "E" pin, was presented by Captain K. V. Dawson, U. S. N., to L. D. Mitchell, a wounded war veteran who has now returned to his employment with the U. S. & S. Co., and Lt. Mitchell presented the pin to W. P. Trout, chief steward, Local No. 610, United Electrical, Radio & Machine Workers of America.

"Transportation," said General Gross, "is the key to our whole war effort. It was natural then that the Army should create a Transportation Corps with a strength of more than a third of a million to integrate its transportation effort. We have some 175,000 serving in overseas theatres, some 30-odd thousand more training to go, and in this country and on duty at sea another 175,000.

**Where Army Railroaders Are**—"Our mission is to move our troops, their equipment and supplies, from the points of origin here in the United States, the camps, posts and depots, to our great ports of embarkation; there transfer them to ships to cross the seas to the many ports of debarkation of our overseas theatres. We have military railway services in India operating the Bengal & Assam Railroad, taking supplies to Assam where they are flown over 'the hump' to Chennault; in Iran where vast quantities of equipment are carried through the Persian corridor for delivery to our Russian ally; in Italy, after having served in North Africa and Sicily, where they now support Clark, in Southern France operating north from Marseilles behind Devers and Patch; and in Northern France and Belgium from the Channel ports to support Bradley, Hodges, and Patton. Even in northern Alaska our railroaders buck the snows through White Horse Pass and to Fairbanks. And soon they will be in the Philippines.

"Another indication of the transportation performance can be gained from a com-

parison between World War I and World War II.

	W. W. I	W. W. II
Men carried overseas	2,100,000	5,000,000
Cargo carried overseas	8,900,000 tons	76,000,000 tons
Men carried by rail in U. S.	5,000,000	26,000,000
Freight carried by rail in U. S.	11,200,000 tons	200,000,000 tons

**Transport Men Militarized**—"The key to our success was that we brought in transportation men to do a transportation job; that we had a well developed transportation system in the United States; and that we had a strong transportation equipment industry to support us. And one of the strongest units in that industry giving us the stoutest help has been and is the Union Switch & Signal Co. Wherever our railroaders are, you too are there with the rugged products of your imagination and skill that are weathering the severest service.

"Some of our ordnance plants for the manufacture of high explosives have been made safer and more efficient by the installation of your centralized traffic control system. Your block signal control system has been sent to Russia and is used particularly to increase their rail capacity close up to the front to neutralize the havoc wrought by the Germans in their retreat.

"We have long been preparing for shifting our war might to the Pacific after the German collapse in Europe. We needed far greater capacity on our transcontinental railroads to take the load. By installing centralized traffic control, their capacity has been increased to do the job. Facilities no longer worry them so much as does the lack of manpower.

"You have done a great job thus far in the war effort. But there is danger that with the defeat of Germany there will be

a tremendous let down, that too many will wish to reorient themselves to peace instead of first finishing off Japan. We shall all of us have to resist that natural reaction, and rather than to let down, steel ourselves so that we may with a firmer faith embrace the task that lies ahead of us all in the Pacific."

**A "Transportation War"**—In accepting the award, President Blackmore mentioned a few of the various types of munitions and war equipment, which had been manufactured by the U. S. & S. Co., and, commenting further, he said, "Our paramount interest has been to make the fullest possible contribution to the war effort. It is a transportation war. Vast quantities of raw materials must be moved from source to factory. The finished products must be moved to the fronts at home and abroad. Enormous troop movements have been piled on top of the normal traffic load. The great bulk of this traffic has to be carried by the railroads.

"In order to maintain and expand their facilities so that maximum transportation capacity can be obtained the railroads have required increasing quantities of things, such as block signal systems, car retarders, cab signals, centralized traffic control systems, interlocking plants, train communication systems and locomotive foundation brakes, which constitute our peacetime production.

"Immense quantities of these items have been supplied to the railroads of the United States and allied countries while our production of direct munitions has increased both in quantity and variety. These achievements would not have been possible without the devoted co-operation of all of our employees."

**Acceptance of Pin by Mr. Trout**—Mr. Trout said "I am proud and happy to

accept on behalf of the men and women of the Union Switch & Signal Co. the pin presented by Captain Dawson. It is token of the honor which he has conferred upon more than 5,000 of you who have toiled to produce weapons for the gallant men who fight our battles on so many far-flung fronts. It is no less a reward for our efforts in producing those devices so important in maintaining and expanding the transportation system that supplies those fronts. As a representative in this plant of Local 610 of the United Electrical, Radio and Machine Workers of America, I am proud that we have contributed to the great record of war production and of adherence to the no-strike pledge for which this union is so well-known."

### O. D. T. Staff Changes

The Office of Defense Transportation announced November 3 the resignation of James E. Carroll as assistant director of its Department of Railway Transport. Mr. Carroll joined the O. D. T. Washington organization on September 1, 1943, on loan from the Chicago, Burlington & Quincy, and he has returned to his position on the staff of that road's executive vice-president. He had charge at first of passenger car operations for O. D. T., then of refrigerator car distribution, in which capacity he represented that agency on the Refrigerator Car Lines Advisory Committee.

The resignation of Col. Leo M. Nicholson as O. D. T. division director in charge of storage, effective November 15, also has been announced. He is returning to private business in Chicago. He will be succeeded by Samuel G. Spear, who has been serving as associate division director in charge of merchandising and raw materials. The O. D. T.'s associate division director in charge of refrigerated warehousing, J. R. Shoemaker, also has given up that post, but will continue to serve as consultant on cold storage problems, the announcement explained.

Effective November 11, Harry Wilson, who has been assistant director of the O. D. T. Division of Rates, succeeded John C. Howard as director of that division, according to another O. D. T. statement. Mr. Howard joined the staff of the organization early in 1942 and became director of the division in May of this year. He was formerly manager of the rate and tariff division of the United States Rubber Co., and leaves government service to join the traffic organization of the Bethlehem Steel Co.

Mr. Wilson joined the O. D. T. staff in August, 1942, having been for a number of years vice-chairman of the Traffic Executive Association—Eastern Territory, with headquarters at New York. Upon Mr. Wilson's promotion to director of the division, Linwood Lewis Adams was named associate division director of the O. D. T. Division of Rates.

On leave of absence from the Chesapeake & Ohio, Mr. Adams has been on the staff of the War Production Board since 1942( and at the time of his new appointment was chief of the transportation branch of the W. P. B. Division of Transportation and Storage.



General Gross (at right) Presents Pennant to Mr. Blackmore (left)



## Sandusky Coal Docks Set Another Record

A new high record of 2,200,736 tons, the greatest coal tonnage ever handled in one month by any port on the Great Lakes, was established in October when the Sandusky, Ohio, docks of the Pennsylvania transferred this record-breaking amount of coal from railroad cars to ships, according to J. M. Symes, vice-president of the Pennsylvania. The total unloadings at Sandusky for the 1944 season up to midnight of October 31, reached 12,886,018 tons, which total was 2,000,532 tons above the previous record season of 1943, when 10,885,486 tons of coal were dumped. October marked the third straight month in 1944, when the total coal dumpings at Sandusky climbed above 2 million tons. The August tonnage was 2,066,257, and the September mark was 2,049,000.

Another new record was made at Sandusky during October when, for the 24 hr. ending at midnight on October 25, a total of 2,071 cars of coal was transferred, the largest number ever dumped in a like period. This is at the rate of a carload every 42 sec.

## Lake Grain Shipments Largest Since 1928

This season's grain shipments on the Great Lakes will be the largest since 1928, but the late fall movement will drop below that in the same period last year, according to reports from vessel operators. As of October 21, a total of 434,399,224 bu. of grain had been shipped so far this year as compared with 421,961,725 bu. moved during the entire 1943 season. Several million bushels are scheduled to be shipped in November and early December. Manpower shortage and lack of railroad cars have retarded the movement to ports but despite the delay, shipments to all ports, American and Canadian, in the first three weeks of October aggregated 51,600,000 bu. compared with 46,300,000 bu. for all of October last year.

## Hockey Leagues Give O. D. T. Travel Conservation Pledge

Professional hockey leagues have pledged their cooperation with the Office of Defense Transportation's program of travel conservation, according to E. J. Connors, O. D. T. assistant director in charge of rail transport. Mr. Connors told of assurances he had received, from executives of the National Hockey League and American Hockey League, of their agreement to abide by the same transportation arrange-

ments that have been in effect for baseball and football organizations, including "the use of coach equipment wherever possible and the making of no Pullman reservations until the day before departure."

## I. C. C. Service Orders

By Service Order No. 249, effective November 6, the Interstate Commerce Commission set up a permit system for the movement in railroad cars of cotton either uncompressed or in compressed bales to compress plants or storage facilities in Arkansas, Louisiana, Mississippi, Missouri, and Tennessee, and also at Texarkana, Tex. Permit agents will be designated, and bills of lading and waybills covering affected shipments are required to bear appropriate permit numbers. Shipments from one compress to another for purposes of consolidation and reshipment are exempt from the permit requirement if bills of lading are properly endorsed.

This permit system has been instituted, it was indicated, because of delays in unloading cars at cotton compresses in the territory designated. Shipment or transportation by any carrier of so-called restricted cotton (that is, cotton originating outside the United States and moved or stored in bond prior to trans-shipment to some point outside the United States has been prohibited, except upon War Food Administration permit, by the Office of Defense Transportation's General Order No. 45, effective November 2.

By Service Order No. 250, effective November 15 and expiring May 31, 1945, the commission has suspended tariff rules to the extent necessary to permit the use of certain large capacity coal cars of the Norfolk & Western, suitable for use only with a mechanical car dumper, for the movement of coal from points in the vicinity of Gary, Ind., to the Carnegie-Illinois Steel Corp. plant at that point. The cars designated are flat bottom, high side gondolas of 180,000 lb. capacity, and the order provides for their use with a 60 net tons minimum weight.

Effective November 9, the commission has set aside its Service Order No. 184, which was issued March 4 and suspended from time to time thereafter. This order was intended to limit the placing of cars for loading by shippers of meats and packing house products. By revised Service Order No. 244, effective October 31, that order's definition of a "blocked elevator" has been modified by increasing the percentage of grain in storage to capacity to 90 per cent instead of 75 per cent. Such percentage computations are required to be computed on a daily rather than a weekly basis.

## Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since October 28, and which are of interest to railways:

**Abrasives and Service Tools**—Purchasers of coated abrasive products are no longer required to file Form WPB-3478 and purchasers of certain types of mechanics' hand service tools are no longer required to file Form 1319 to obtain specific authorization from the W. P. B. Two

deletions from M-293, Table 12, affect all types of coated abrasive products, such as sandpaper and emery cloth, and hand service tools such as pliers, screw drivers and six types of wrenches. Screening of large orders placed with producers is no longer considered necessary by W. P. B. W. P. B. emphasized that purchases of mechanics' hand service tools are still controlled by GPO E-6, (which requires a rating of AA-5 or better for all orders placed with tools producers), and Order L-216, Schedules 2 and 3, (which limits production to specified patterns, types, finishes,

etc., and limits use of alloy steels in production of wrenches and pliers).

**Communication Wire**—With the armed forces demanding approximately 300,000 miles of communications wire a month, the prospects are that man-power in the producing plants will continue to be a problem indefinitely. Production for September was scheduled at 170,000 miles of wire, but actually only 156,000 miles rolled off the lines, a gain over the 139,000 miles produced in August, although it was still far below actual needs. For the remaining quarter of the year the schedule calls for 188,000 miles this month, 197,000 in November and 211,000 in December.

**Two-Way Radio Equipment**—There has been no relaxation of restrictions that would allow the sale of two-way radio communication equipment on unrated purchase orders. Certain manufacturers who have erroneously informed their customers that they could make deliveries on unrated orders have been asked to correct this impression, W. P. B. said. Two-way emergency radio communication equipment is available only in limited quantities for essential use by police departments, public utilities, railroads and other essential industries when the equipment is vital to their operation, W. P. B. said. Those who have need of such equipment should make application for priority assistance to W. P. B. Public utilities should use Form WPB-2774, which is filed in Washington.

**Wire Rope**—To conserve supplies of high carbon steel wire, Schedule 16 to Limitation Order L-211 has been issued to restrict the manufacture of steel wire rope. The new schedule prohibits the manufacture of wire rope of 6 by 19 filler wire Seale construction in diameters  $\frac{3}{4}$  in. and smaller with filler wire of high carbon wire, and 6 by 37 construction in diameters  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. inclusive, and limits the number of wires in 6 by 37 construction in sizes  $\frac{3}{4}$  in. to  $1\frac{1}{2}$  in. The new schedule also contains a number of restrictions on the manufacture, delivery and acceptance of other sizes of steel wire rope.

## Prices

**Western Pines**—Several changes in the regulation covering western pine and associated species, including the addition of western pine mouldings to its coverage, an increase of \$1 per M. b. m. for resawing and establishment of log-run prices for certain species of pine became effective November 2, through Amendment No. 1 to RMPR-94. Previously, mills could add \$1 per M. b. m. to their base price for resawing service and \$2 for the operation of resawing and surfacing two sides. These charges are now increased to \$2 and \$3 respectively, and will compensate the mills for their out-of-pocket costs in doing this work, O. P. A. said. Today's action also establishes an addition of \$2 for centermatching. O. P. A. pointed out that these increased charges do not increase prices for the buyer. On the contrary, they save him the higher price he pays when rerouting lumber through a custom mill rather than having this work done by the producing sawmill as is customary, the agency said. For example, large quantities of resawn or dressed and matched stock are required by the CPA which purchases lumber for the armed services for use in ammunition boxes and other containers. The agency has been obliged to ship rough lumber from the sawmills to custom mills where it was resawn or dressed and matched at prices of approximately \$6 per M. b. m. for resawing and \$7 for surfacing and matching. The regulation previously provided one price, \$28.50 for all thicknesses of log-run lumber regardless of species when sold by mills in the "fringe" area (the lumber producing portions of South Dakota, Wyoming, Colorado, Utah, Nevada, Arizona and New Mexico). The amendment also established prices for flooring, drop siding and ceilings in grades B and better, C and D of inland larch, Douglas fir and hemlock. These prices had previously been given mills under individual application. An addition of \$1 per M. b. m. is allowed for restricted random lengths 10 ft. and longer in white fir common boards. The note providing this addition appears under all of the other price tables in the regulation covering common grades and was inadvertently omitted in this instance. The new action also deleted the prohibition against making additions for seven-quarter stock dressed thicker than standard.

# GENERAL NEWS

## Notes '44 Emphasis on Freight Diesels

**Total tractive effort exceeds  
that of this year's new  
steam engine**

Devoting a section of the November issue of its Monthly Comment on Transportation Statistics to Diesel locomotives, the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission directs attention to Association of American Railroad figures which reveal that the new Diesel-electric freight locomotives installed by Class I line-haul roads during the first nine months of this year showed an aggregate tractive effort in excess of the freight steam tractive effort added in the same period—18.9 million pounds, compared with 18.5 million pounds. The I. C. C. Bureau calls this "relatively heavy emphasis on freight service Diesels" the "most interesting and, perhaps, significant feature of these 1944 figures from a long run standpoint."

**Ratio of Diesel Gain**—The A.A.R. figures show that all Diesels installed in the first nine months of this year had an aggregate tractive effort of 41.4 million pounds. The I. C. C. Bureau calculated that this increment in less than one year "was equivalent to approximately 35.3 per cent of the entire tractive effort of locomotives of this type reported by Class I line haul railways at the end of 1943, after nearly two decades of growth."

Meanwhile, the Bureau had made its usual analysis of railroad revenues, expenses, and net earnings, pointing out that September brought a reversal of the trend which since February had shown smaller and smaller percentage increases in each month's passenger revenues as compared with the same 1943 month. The decline was from February's 26.7 per cent above February, 1943, to August's 0.1 per cent above August, 1943. The reversal in September made that month's passenger revenues 4.3 per cent in excess of those reported for September, 1943. Whether this "is temporary or marks the beginning of a general upward trend, it is not possible to say at present," was the Bureau's comment.

**Lower Traffic in November?**—The monthly passenger revenue index, based on the 1935-1939 monthly averages as 100, was 451.3 for September as compared with August's 462.7. The September freight-revenue index was 227.5, compared with 229.9 for August. As the Bureau pointed out, September's freight revenue "was 4.3 per cent lower than for August, in spite of the usual seasonal upturn in September."

However, it was 2.6 per cent above the freight revenue of September, 1943. With respect to expected decline in November carloadings, it is observed that this drop, estimated at 0.2 per cent, "would be more pronounced if the 1943 level had not been abnormally depressed by work stoppages in the coal mines."

Passenger traffic and revenue figures are tabulated back to 1938, attention being called to the fact that the revenue from passengers in coaches during the first half of this year totaled \$522.6 million, while that collected by railroads from Pullman passengers totaled \$329.5 million. The Bureau thought it "of interest to note" that in 1938 and 1939, "years of relatively light traffic," the receipts from the two services were about equal—\$88.3 million from coach passengers, and \$88.5 million from Pullman passengers in 1938 and \$88.8 from each in 1939.

Another table, which sets up the average revenue per passenger-mile in coaches and in Pullmans, shows it at 1.7 cents and 2.42 cents, respectively, for the first six months of this year as compared in turn with 1.82 cents and 2.39 cents for the first half of 1938. In that connection it is stated that "owing to the lengthening of the average journey, reduced fares for certain kinds of travel, and land-grant deductions these figures do not accurately reflect the various changes in the basic fare levels since 1938, including the 10 per cent increase in 1942." It is also pointed out that the averages do not include the transportation tax paid by passengers, while the figures for Pullman passengers are based on railroad revenues and thus do not include the charges collected by the Pullman Company, "an average of 0.553 cents per passenger mile."

**Wide Range in Interest Charges**—The statement discusses in some detail a tabulation of data on the average nominal rate of interest on long-term debt of the railways. The range of rates shown runs from 2.37 per cent on equipment obligations of Class I line-haul roads to 5.53 per cent on unsecured debentures of Class II line-haul carriers. The figures, as the Bureau puts it, "partially confirm more or less prevalent assumptions of corporate finance with regard to rates of interest carried by different types of corporate obligations. Receivers' and trustees' certificates and equipment obligations showed by far the lowest nominal rates of interest."

What was called "perhaps the most interesting feature of the table" was found "in the consistently lower rates shown by miscellaneous obligations as compared with mortgage bonds." Of this the Bureau said: "No general explanation can be offered, the nonnegotiable debt to affiliated companies having been excluded from the miscella-

(Continued on page 739)

## A Collision Despite Automatic Signals

**I. C. C. finds opposing trains  
allowed in same block  
near Terre Haute**

The immediate cause of the head-on collision on the Chicago & Eastern Illinois near Terre Haute, Ind., on September 14, in which members of the Army Air Forces were among those killed, was failure to obey a meet order and to control the speed of a train in conformity with automatic block signal indications, according to the report of the investigation by the Interstate Commerce Commission under the supervision of Chairman Patterson.

Supplementary findings pointed out, however, that a rule in effect in the territory concerned, as modified by special timetable instructions, "practically nullified the protection intended to be provided by the block system for opposing first class trains within yard limits," and that "the block signal system in use on this line was not adequate for authorized speeds."

As a result of these findings, the report recommended that the road install an automatic train stop, train control or cab signal system on the line on which the accident occurred.

**29 Lives Lost**—This collision resulted in the death of 26 passengers and 3 employees and the injury of 32 passengers, 4 railway mail clerks, and 6 employees. It brought about a vigorous denunciation of railway managements and the commission by Senator Wheeler of Montana, chairman of the Senate committee on interstate commerce, in which he stated that "our railroad systems have not adequately installed available safety devices" and that the commission's actions to require the railroads to make such installations have been "inadequate."

These remarks were reported in *Railway Age* of September 23, page 487, while Chairman Patterson's reply, pointing to the continued improvement in the railroads' safety record, was noted in the issue of September 30, page 521.

The accident occurred at 2:20 a. m. in a dense fog. The trains involved, No. 90, a standing northbound 15-car express and mail train, and First 95, a section of the southbound "Dixie Flyer," (made up of a locomotive, one baggage car, one baggage-mail car, one Pullman tourist car, two Pullman sleeping cars, five coaches, and four Pullman sleeping cars, in the order named) were operating on single tangent track by timetable, train orders, and an automatic block signal system. The point of collision was within yard limits 0.13 mile north of



the station at Dewey and 3.83 miles north of Terre Haute.

**Signal Arrangement**—The automatic block signal system in this territory was arranged on the overlap principle. From south to north the signals involved were, in order, Nos. 174-8, 173-8 (northbound) and Nos. 173-7, 172-7, and 171-9 (southbound); these were, respectively, 6,298 ft. south, 6 ft. south, 6 ft. south, 5,592 ft. north, and 9,587 ft. north, of the point of collision. Signal 174-8 was continuously lighted, while the others were approach lighted; all were of the upper-quadrant semaphore type. The controlling track circuits were so arranged that signal 172-7 would display approach and signal 173-7 would display stop when a northbound train passed signal 174-8, while No. 174-8 would display approach and No. 173-8 would display stop when a southbound train passed No. 171-9. Signals 173-7, 173-8 and 174-8 were located within yard limits. The maximum authorized speed for the trains involved was 50 m. p. h.

At Terre Haute the crew of the northbound train received three train orders; one giving First 95 superiority over it from Clinton (10.9 miles north of Dewey) to Terre Haute; one establishing a meet at Dewey with First 95, which was directed to take the siding; and a third directing First 95 to take siding and meet No. 90 at Atherton (a station 6.5 miles north of Dewey) instead of Dewey. First 95 had received the order giving it superiority from Clinton to Terre Haute, and at Clinton, among other orders, it received a clearance form and an order directing it to take siding and meet No. 90 at Atherton. The words "instead of Dewey" were omitted from this order at the dispatcher's direction, and the preceding order, establishing a meet at Dewey for First 95 and No. 90, was annulled and not delivered to First 95.

According to the report, when No. 90 passed signal 174-8 it was displaying proceed. Soon afterward the enginemen observed signal 173-8, a considerable distance ahead, displaying approach, and the engineer made a service brake reduction. The aspect of this signal then changed to stop, and the engineer stopped No. 90 at the signal, then proceeded, since the signal was within yard limits and the rules there effective permitted a train, after it had stopped short of a block signal displaying stop, to proceed immediately but with caution to the next signal. When No. 90 had moved a few feet, however, the headlight of First 95 was seen a few hundred feet ahead, and the northbound train was stopped immediately, with its front end about 6 ft. north of signal 173-8.

**Orders Not Given to Conductor**—The southbound train passed Clinton about 14 min. before the accident occurred, and a member of the engine crew and the front brakeman, who was in the sixth car, caught copies of a clearance form and train orders from a train order delivery device there. The front brakeman read the orders and understood that his train was to take siding at Atherton to meet No. 90. He made no effort to deliver the orders to the conductor, however, but proceeded toward the front of the train to be in

position to open the switch when the train stopped. Because of darkness and fog, he was not aware that his train passed Atherton without stopping and made no effort to bring it to a stop before the collision occurred. "The conductor and the flagman were in the rear car when First 95 passed Clinton," the report pointed out. "They knew that copies of train orders had been received by other members of the crew, but they made no attempt to ascertain the requirements of the orders."

First No. 95 passed Atherton, continued past signal 172-7, which displayed approach, and was moving at a speed of about 35 m. p. h. when it collided with No. 90 about 6 miles south of Atherton and about 6 ft. north of signal 173-7, which displayed stop.

**Too Fast on a Yellow Board**—The approach indication of signal 172-7 required the speed of First 95 to be not over 30 m. p. h. and required it to approach signal 173-7 prepared to stop, and the stop indication of signal 173-7 required that the train be stopped before passing it. The investigation did not disclose why the enginemen on First 95 failed to stop at Atherton or why its speed was not controlled as required by rule after it passed the approach signal, as both the engineer and fireman were killed. The enginemen's copies of the train orders received at Clinton (where a train order signal was displayed) had not been found when the investigation was made, but the rules required that a train be stopped immediately if a train order signal was passed without a clearance form being received. The operator at Clinton saw a member of the engine crew take the orders from the delivery device.

The force of the collision moved the standing train backward about 68 ft. Both engines, the first car of No. 90 and the first four cars of First 95 were derailed and badly damaged, and several other cars in each train were considerably damaged. The second car of First 95 telescoped the third car (both were of all-steel construction) and the latter was "sheared practically its entire length diagonally from the floor on the right side to the juncture of the roof and side sheets on the left side." The passengers killed were occupants of this car.

**Signals Not Obeyed**—The brakes of First 95 had functioned properly when tested, and no condition was found to prevent their proper application. No action was taken to apply them, however, until about 30 seconds before the accident occurred, when they were applied in emergency, the train speed then being estimated as 55 m. p. h. The report pointed out that, "if the speed of First 95 had been reduced to not exceeding 30 m. p. h. as required, and so controlled that the train could be stopped short of signal 173-7, which displayed stop, the accident would either have been prevented or its disastrous consequences would have been averted."

Continuing, the report explained that signal 172-7, which displayed approach for the southbound train, was equipped with an oil lamp that had been converted to electric lighting and which emitted rays of much less intensity than other signal lamps in the vicinity, with the result that "it is possible that the engineman did not see the in-

dication because of the dense fog and the relatively low intensity of the signal light."

While the engines of the trains involved were equipped with automatic train stop devices, there were no roadway elements of this system installed in the vicinity of the accident, train stop territory terminating 11.47 miles north. If the system had been in operation, the report stated, the train stop device on the engine of First 95 would have been actuated about 5,600 ft. north of the point of the accident, "and this accident probably would have been averted."

Referring to the requirements of the commission's order establishing standards for automatic signal installations, the report pointed out that a train is intended to pass one signal displaying approach before it reaches one displaying stop. Here, however, the track circuits were so arranged that signals 174-8 and 173-8, governing the northbound train, displayed, respectively, proceed and stop, as No. 90 passed signal 174-8 before the opposing train entered the limits of its control circuit. While the engineman did see signal 173-8 displaying approach, and then stop, in time to stop before their train passed that signal, if they had not seen the indication until the engine was in the vicinity of the signal No. 90 would have passed it and would have collided with First 95 a considerable distance beyond, the report observed, and "the accident might have been more disastrous."

**Signal Rules Need Changing**—Attention also was called in the report to the rule under which No. 90 was authorized to proceed immediately after stopping at signal 173-8, even though First 95 was authorized to enter the other end of the

### Georgia "Equalization" Case Raises Legal Questions

The Supreme Court of the United States has ordered a show cause order served on some 20 railroads named as defendants in an original complaint of the state of Georgia alleging losses resulting from so-called discriminatory freight rates. Referred to as *State of Georgia vs. Pennsylvania Railroad*, the complaint was filed during the summer, as noted in *Railway Age* of June 24, page 1227, where the defendant roads were named.

These defendant roads are required by the order to show cause, if any, why leave to file the bill of complaint should not be granted. The issues thus raised are basically legal and technical, rather than immediately related to the rate "equalization" question. The complaint was filed in the Supreme Court directly under a provision of the Constitution construed as permitting a sovereign state to take such action rather than go through the lower courts.

Returns to the show cause order are due December 11, and argument on the question raised in the order will be heard January 2, 1945.

same block at the same time by the approach aspect displayed by signal 172-7 so long as No. 90 had not passed signal 173-8. Thus each train was authorized to proceed through the block while it was occupied by an opposing train, No. 90 under control and First 95 at not exceeding 30 m. p. h. "This condition should be corrected immediately," the report said, although under the circumstances in this case the collision would have occurred even if the rule had not permitted No. 90 to proceed, since First 95 was not prepared to stop at the stop signal, as required by the rules.

"This investigation disclosed that the signals involved did not provide an adequate margin of safety in stopping distance for trains operated at maximum authorized speeds," the report concluded. "Pending such modifications of the signal system as may be required to provide adequate protection for trains being operated at presently authorized maximum speeds, the carrier should at once reduce the maximum authorized speeds to the limits for which the existing signal installation will provide adequate stopping distances."

### Three Billion Cycles for Train Communication

In the report of the train communication hearing which was published in the September 23, 1944, issue of *Railway Age*, on page 475, Ernest A. Dahl, electronics engineer, Chicago, Rock Island & Pacific, was reported to have said that when 2,000 to 3,000 megacycle radio was used for train communication, fading was very bad when the train was in motion. This was in error, since completely satisfactory communication was maintained. The complete testimony on this point was as follows:

"All during these tests it was noted there were shadow effects which showed up as a change in limiter current. None of these shadow effects interfered or were noticed in any way in the audio output and at all times the limiter was in a saturated condition although the limiter current varied. Extremely satisfactory communication conditions were maintained.

"If the signal intensity of a yard system is kept higher than the saturation point of the limiter of the receiver at maximum distance, no shadow effects will be noticed. Since the shadow effect would only cause an amplitude change in limiter current, the receiver output would always be constant."

### Fined for Handling Beer Cases in RS-Type Reefers

Secretary W. P. Bartel has made public information received by the Interstate Commerce Commission that 12 railroads have confessed judgment to complaints recently filed in federal courts against them for violations of the commission's Service Order No. 178. The bills of complaint, which were filed through the office of the Attorney General, charged that each of the roads had transported 5 carloads of empty beer containers in RS-type refrigerator cars in violation of the order. The court actions were the result of investigations conducted by the commission's Bureau of Inquiry.

The roads involved, and the penalties im-

posed on each, are as follows: Baltimore & Ohio, \$1,000; Chesapeake & Ohio, \$1,000; Delaware, Lackawanna & Western, \$1,000; Erie, \$1,000; Missouri-Kansas-Texas of Texas, \$200; New York Central, \$1,000; New York, Chicago & St. Louis, \$1,000; Pennsylvania, \$500; Pere Marquette, \$1,000; Reading, \$500; Richmond, Fredericksburg & Potomac, \$500; and Southern, \$1,000.

### Freight Car Loading

Loadings of revenue freight for the week ended November 4 totaled 893,333 cars, the Association of American Railroads announced November 9. This was a decrease of 23,113 cars or 2.5 per cent below the preceding week, but an increase of 138,594 cars or 18.4 per cent above the corresponding week last year, and an increase of 63,670 cars or 7.7 per cent above the comparable 1942 week.

Loading of revenue freight for the week ended October 28 totaled 916,446 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading			
For the Week Ended Saturday, October 28			
District	1944	1943	1942
Eastern .....	168,531	166,561	163,673
Allegheny .....	194,450	187,958	187,452
Pocahontas .....	57,075	51,929	55,894
Southern .....	126,228	116,810	126,544
Northwestern .....	138,902	143,681	133,775
Central Western .....	151,914	138,932	144,948
Southwestern .....	79,346	77,856	78,274
Total Western Districts .....	370,162	360,469	356,997
Total All Roads .....	916,446	883,727	890,560
Commodities			
Grain and grain products .....	55,721	58,181	47,320
Live stock .....	27,479	26,978	24,832
Coal .....	177,146	146,192	169,690
Coke .....	14,150	15,375	14,436
Forest products .....	45,107	43,911	47,514
Ore .....	67,490	77,311	63,267
Merchandise I. C. L. .....	110,003	106,544	92,216
Miscellaneous .....	419,350	409,235	431,285
October 28 .....	916,446	883,727	890,560
October 21 .....	905,941	905,419	903,262
October 14 .....	898,650	912,348	901,251
October 7 .....	877,942	906,357	909,250
September 30 .....	912,999	910,644	907,286

Cumulative Total,

44 Weeks .. 37,019,912 36,026,889 36,751,433

In Canada.—Carloadings for the week ended October 28 totaled 78,535, as compared with 78,601 for the previous week and 78,330 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
Oct. 28, 1944 .....	78,535	39,097
Oct. 21, 1944 .....	78,601	39,552
Oct. 14, 1944 .....	70,385	37,459
Oct. 30, 1943 .....	78,330	41,534
Cumulative Totals for Canada		
Oct. 28, 1944 .....	3,027,499	1,651,095
Oct. 30, 1943 .....	2,847,554	1,722,688
Oct. 31, 1942 .....	2,799,002	1,463,529

### Dr. Lorenz Retires

Dr. Max O. Lorenz, director of the Interstate Commerce Commission's Bureau of Transport Economics and Statistics and its predecessor, the Bureau of Statistics, since 1917, retired on October 31. No successor had been appointed when this issue went to press.

Dr. Lorenz was born September 19, 1876, at Burlington, Iowa, and was graduated from the University of Iowa with an A. B.

degree in 1899. He received his Ph. D. from the University of Wisconsin in 1906. Meanwhile Dr. Lorenz had been a high-school teacher at Burlington from 1899 until 1901, and an instructor in economics at the University of Wisconsin from 1901 until 1907.

He was Wisconsin's deputy commissioner of labor and industrial statistics from 1907 until 1909, when he became special agent of the United States Bureau of the Census, remaining in that position until the following year. He then served for another brief period as statistician with the Bureau of Railway Economics, leaving in 1911 to join the I. C. C. staff as associate statistician. He remained in that position until 1916, when he became secretary of the Eight Hour Commission. As noted at the outset, he became director of statistics for the commission in 1917.

### Loss and Damage Jumps More Than \$8,000,000 in First Half

Freight loss and damage payments made during the first six months of 1944 by 136 carriers, representing 95 per cent of U. S. \$18,744,123 in the same period last year, mileage and 99 per cent of Canadian mileage, totaled \$26,921,990, compared with an increase of \$8,177,867, according to figures compiled by the Freight Claim division of the Association of American Railroads. Of the total, U. S. railroads paid out \$25,927,495 or 0.75 per cent of their freight revenue in contrast to 0.55 per cent in the same period last year.

Loss and damage to item 36, "all other manufactures and miscellaneous" articles, constituted 24.9 per cent of total payments while that to new furniture, fresh vegetables, live stock and bottled beverages amounted to 8.1, 6.6, 6.1 and 5.3 per cent respectively. Unprecedented increases, due to war-time conditions, occurred in several of the causes. Loss and damage due to improper refrigeration or ventilation increased 178.9 per cent; due to theft of entire package, 174.6 per cent; due to theft of other than entire package, 131 per cent; due to loss of entire package, 88.4 per cent; and due to concealed loss, 85.7 per cent.

### Rules Again on Contracts with Star-Route Truckers

Reporting on reconsideration of proceedings involving Railway Express Agency arrangements with star-route mail carriers for the transportation of express, the Interstate Commerce Commission still holds that such arrangements do not suffice to make R. E. A. a common carrier by motor vehicle unless they conform to the Dixie-Ohio case rule by providing for R. E. A. direction and control of the vehicles and for its responsibility to both the shipper and the general public. The proceedings involve R. E. A. applications for certificates covering highway operations in substitution for discontinued train service on certain Illinois routes, the title case being No. MC-66562 (Sub-No. 356).

The prior report by Division 5 was noted in the *Railway Age* of December 12, 1942, page 978. Since that time, the Supreme Court has issued its January 17, 1944, decision in *Thompson v. United States*, 321 U. S. 19 (see *Railway Age* of January 22,



1944, page 258). There the court reversed the commission to award the Chicago & North Western certificates covering certain truck routes which the commission had awarded to independent truckers who served the railroad under contract. R. E. A. then took the position that it was entitled to the certificates sought in the present proceedings under the principles announced by the court in the Thompson case.

The commission's report reads the Thompson case decision as one dealing with a particular set of facts and holds that the court did not by it intend to disaffirm generally the "responsibility-and-control" doctrine. As the commission sees it, the court found in the Thompson case a "single complete freight transportation service," wherein the trucking operations were so "completely synchronized with the rail service" that there was "no room for any question of who controls a part thereof, the only question being who controls the whole."

"It does not follow from this," the report adds, "that all coordinated or synchronized services are so fused as to make up a unit of this character. Indeed, the contrary is the rule as indicated by the cases cited above and many others of the same tenor, which might be cited, wherein the control-and-responsibility test has been applied with judicial sanction."

Because it viewed the Express Agency's proposed arrangement with the star-route operators as something less than a "completely synchronized" service of the variety dealt with in the Thompson case, the commission affirmed the findings of Division 5's prior report. It held the proceedings open for 90 days to permit submission of proposed new arrangements with the star-route operators; and for an additional 30 days to permit protestants to reply. The report, which carried no dissents, notes that Commissioners Lee, Splawn, and Rogers "concur in the result."

### Legality of Pacific Greyhound's Affiliations Questioned

Division 4 of the Interstate Commerce Commission has denied applications of Dollar Lines for authority to purchase the operating rights of United Stages System, and of Pacific Greyhound Lines and the Greyhound Corporation for authority to acquire control of the competitive Dollar Lines through purchase of additional capital stock. The companies named are operators of bus lines in California and Oregon. The Southern Pacific owns a majority of Pacific Greyhound Stock, and Pacific Greyhound holds 40 per cent of Dollar's stock, the balance being held indirectly by the Standard Oil Co. of California, with whose consent Pacific Greyhound has been exercising actual control of Dollar's operations. United Stages is controlled by Pacific Greyhound.

As noted in *Railway Age* of September 4, 1943, denial of the applications had been recommended in an examiner's proposed report, which went on to question the legality of the control of Dollar as exercised by Pacific Greyhound and the Greyhound Corporation. Subsequently Greyhound Corp. filed applications for authority to acquire control, thus, in effect, accepting the obliga-

tion of a holding company as established in the Refiners Transport case.

The division's finding was based, its report showed, on the continuation through the arrangement with Standard Oil of the "evils inherent in the common control of . . . Pacific Greyhound and Dollar Lines, respectively, and condemned by the commission" in previous decisions. Whether or not "actual" control is now held lawfully because effected before the 1935 Motor Carrier Act became applicable may be determined following an investigation under section 5 (7) of the act, it commented. Meanwhile "the operating situation promptly should be corrected through merger of the properties or divestiture of the admitted 'actual' control." Unless steps to accomplish such results are taken through appropriate applications, it suggested, "consideration will be given to an investigation proceeding under section 5 (7)."

### Challenger Derailed on S. P.

Nine persons, including the fireman, two sailors, a soldier and a Wave, were killed and 73 persons were injured when the Challenger, en route from Chicago to San Francisco, Cal., was derailed on the Southern Pacific near Colfax, Cal., at 5 a.m. on November 8. At the time of going to press, the cause had not been determined. The locomotive and 10 cars left the rails on a curve in a cut west of Colfax. Five coaches and two baggage cars came to rest on the side of the cut, one car crushing the roof of another.

### I. C. Completes Line Atop T. V. A. Kentucky Dam

The Illinois Central sent its first train across the top of the Tennessee Valley Authority's dam at Gilbertsville, Ky., on November 2 with J. L. Beven, president of the I. C.; S. S. Willis, governor of Kentucky; and others participating. The dam, 8,650 ft. in length, is located in the Tennessee River, 22½ mi. above Paducah, where the Tennessee joins the Ohio and where an I. C. bridge carries its main line from Louisville across the Tennessee. Its construction, which began in July, 1939, entailed the protection of the piers and the maintenance of the railroad's bridge by T. V. A. during the erection of the dam and the removal of the track to the top of the dam so that the railroad bridge could be removed. The I. C. tracks were relocated by the company's forces, the cost being borne by the T. V. A.

### Representation of Employees

The National Mediation Board has certified results of a recent election wherein the Railway Employees Department, A. F. of L., System Federation No. 18, was chosen as the Railway Labor Act representative of Boston & Maine mechanical department foremen and supervisors, including foremen in other departments who supervise only employees covered by agreements between the carrier and the craft organizations affiliated with the Railway Employees Department. The employees involved were previously unrepresented.

Another board report reveals that the Père Marquette has recognized the C. I. O.'s National Maritime Union of America as

bargaining agent for the unlicensed personnel of the deck, engine and stewards' departments of its car ferries. Thus the C. I. O. union has withdrawn its request for an election among these employees who were formerly represented by the A. F. of L.'s Seafarer's International Union of North America.

### Alleghany's Status Discussed in 3-Day I. C. C. Hearing

A finding by the Interstate Commerce Commission that the Alleghany Corporation and Robert R. Young and Allan P. Kirby, its principal stockholders, have violated section 5(4) of the Interstate Commerce Act by acquiring control of two or more carriers without the authority of the commission was proposed in a brief recently filed by the commission's counsel for the Bureau of Inquiry. At the same time Alleghany and the individuals named submitted a brief in which the argument was developed that the power to exercise such control had been acquired prior to the passage of that provision of the statute, and had since been maintained, so that no violation had occurred.

**Has Control Been Continuous?**—The briefs in effect restated the positions taken by the parties in the presentation of testimony in hearings in the No. 29085 proceedings, reported in *Railway Age* of July 29 and August 5, pages 212 and 245, respectively. The commission instituted the inquiry on its own motion, with a view to determining whether Alleghany had control, or the power to exercise control, of the Chesapeake & Ohio, Pere Marquette and Nickel Plate on August 30, 1941, it being conceded that it does have such control now, and that it first acquired control prior to 1938. The continuity of control through 1941 is important in the outcome of the case because an amendment to the Interstate Commerce Act, effected by the Transportation Act of 1940, required authorization for such control subsequently obtained, but did not disturb relations previously established.

In its brief, Alleghany contended that it has continuously maintained its control of the carriers since it was first acquired, asserting that a "reasonable and practical" construction of section 5 impels this conclusion, inasmuch as the terms of Alleghany's bond indentures, before their amendment, gave the corporation the right to redeem its bonds at any time prior to maturity and also the right to cure a collateral deficiency at any time. In other words, even though the trustees under certain bond indentures might have taken technical possession of its carrier stocks pending correction of deficiencies in collateral, the right to restore the collateral and so repurchase the stocks, or to obtain funds elsewhere and retire the bonds, with the same result, remained in Alleghany, according to this reasoning.

**The Alleghany Position**—Even assuming that Alleghany had lost control of the carriers through failure to maintain the collateral behind the bonds, and that it acquired control again, subsequent to the enactment of the section of the act in question, through the amendments to the bond in-

dentures which were worked out by Alleghany and the trustees to clear up the tangled situation, the amendments still did not require commission approval, this brief argued, because Alleghany could have accomplished the same result, without commission approval, through exercise of its pre-existing indenture right to redeem its bonds. And it went on to say that any illegality in control that might have existed prior to redemption of the bonds was terminated by the act of redemption.

Again assuming that the indenture amendments did result in acquisition of control, section 5(4) still was not violated, according to Alleghany's brief, because the transaction did not result in the accomplishment or effectuation of control in a common interest of two or more carriers within the meaning of that section.

The Bureau of Inquiry contended, on the other hand, that Alleghany's control, or power to control, lapsed in 1938, had not been regained by August 30, 1941, but was reacquired after that date. Moreover, its brief said, Alleghany violated section 5 in any event, since it was in control of a motor carrier, the United States Trucking Corp., at the time it acquired control of the C. & O.

**Asks "Violation" Be Ended**—Even assuming that Alleghany retained some power to exercise control of the railroads during the time preceding the amendments to its bond indentures, the bureau argued, section 5(4) was still violated, because a change in the character or type, measure, or extent of control constitutes an acquisition of control and, if accomplished subsequent to the enactment of that section of the act, requires commission approval. In recommending a finding that Alleghany had failed to exercise continuous and uninterrupted control of the carriers, the bureau suggested that "the commission should take such action as, in its judgment, is warranted to prevent further continuance of such violation."

The next step in the disposition of this case is expected to be the submission of a proposed report and the receipt by the commission of exceptions to the conclusions expressed therein. Meanwhile the relationship between Alleghany and the C. & O. has come up in another proceeding, F.D. No. 14692, in which Assistant Director Boles of the commission's Bureau of Finance heard testimony at Washington, D. C., last week. Here the C. & O. has applied for authority to assume liability for a security issue of a subsidiary, the Norfolk Terminal & Transportation Co., and to acquire its properties, and Alleghany, by virtue of its control of the C. & O., supplemented the application for authority to acquire the properties.

**Advantages Claimed for Control**—At the time the No. 29085 hearings were in progress another finance docket proceeding, No. 14561, was pending, and it was indicated that the two would be consolidated. Subsequently, however, Alleghany withdrew its F.D. No. 14561 application (as noted in *Railway Age* of September 30, page 531), reportedly because the absence of a specific transaction to be ruled upon constituted a technical obstacle to a reso-

lution of the basic question, that is, the legality of Alleghany's control of C. & O., and undertook to get a finding by the commission on that point in the Norfolk Terminal case instead.

The No. 14692 hearing, which continued for three days, was devoted to the development for the record of a detailed review of the relationships between Alleghany and the C. & O. and the advantages which the witnesses saw in such relations. Among those appearing at the hearing were Carl E. Newton, president of the C. & O.; Robert J. Bowman, president of the Pere Marquette; Mr. Young; Holly Stover, president of the Chicago & Eastern Illinois; several C. & O. vice-presidents, including R. S. Marshall, E. M. Thomas, and W. H. Wenneman; Brig. Gen. Leonard F. Ayres, economic advisor to the C. & O. system roads; and other directors.

### A. S. M. E. Annual Meeting

Completion of the war-production job and preparations for reconversion are the aims of the program for the annual meeting of the American Society of Mechanical Engineers which is to be held at the Hotel Pennsylvania, New York, November 27 to December 1, inclusive. Three Railroad Division sessions have been arranged, also sessions on Management, Power, Fuels, Metals Engineering, Education for Management, Wood Industries, Applied Mechanics, Aviation, etc. The program for the Railroad Division sessions and parts of other sessions follows.

The annual dinner of the society will be at 6:30 p.m. on Wednesday, November 29; the Railroad Division luncheon at 12:30 p.m. on Thursday, November 30.

Edward G. Budd, president, Edward G. Budd Manufacturing Company, is among those upon whom awards and honors will be conferred. Mr. Budd will receive the A. S. M. E. Medal "because of his outstanding engineering achievements" which included the welded all-steel automobile body; the steel-disk automobile wheel; the Shortweld process, which made practical the use of stainless steel in passenger-car and other structures, and the construction of lightweight streamline trains.

Monday, November 27

2:30 p.m.

Education and Training—Management (I)  
Speakers: Carroll L. Wilson, Dean A. A. Potter, E. H. Armstrong

8 p.m.

Management (II)

*The Returning Service Man*

The Selective Service Act and Its Relation to the Returning Service Man, by Brig. Gen. William C. Rose, War Manpower Commission.

Problems of the Returning Service Man from the Viewpoint of Organized Labor, by Clinton S. Golden, assistant to the president, Congress for Industrial Organization

Power (I)—Fuels

Discussion of photographic analysis of furnace performance

Locomotive Firebox Photographic Analysis, by Walter Leaf, D. & R. G. W.

Tuesday, November 28

9:30 a.m.

Management (III)

*New Horizons for the Engineer in American Industry*

Trends in Economic Development, by Ralph E. Flanders, past-president, A. S. M. E., and president, Federal Reserve Bank of Boston

Program for Industry, by Scott Fletcher, Committee on Economic Development

2:30 p.m.

Fuels (II)

Symposium on Future Trends of Fuel

Metals Engineering (II)

Relative Cost of Castings and Welded Structures in Diesel-Engine Design, by L. F. Williams, Cooper-Bessemer Corporation.

Recent Developments in Engineering Materials, by Archibald Black, Simmonds Aeroaccessories, Inc.

Wednesday, November 29

2:30 p.m.

Railroad (I)—Oil and Gas Power (I)

Gas-Turbine Locomotive for Main-Line Service, by Paul R. Sidler, resident engineer, Brown, Boveri & Co.

A Gas-Turbine Road Locomotive, by J. T. Rettaliata, manager, research and gas-turbine development division, Allis-Chalmers Manufacturing Co.

6:30 p.m.

Annual dinner

Thursday, November 30

9:30 a.m.

Education for Management

An experiment in Management Education, by R. C. Muir, vice-president in charge of engineering and assistant to the president, General Electric Company.

Upper Management in Training, by Guy R. Cowing, assistant director, General Motors Institute

Railroad (II)

Progress in Railway Mechanical Engineering—Report of Committee RR-6, Survey, by E. G. Young, chairman; K. F. Nystrom; B. S. Cain; E. R. Battley, and H. C. Wilcox

Practical Aspects of Feedwater Treatment for Locomotive Use, by Thomas H. Hislop, water engineer, New York Central System

Carry-over in Locomotive Boilers, by Arthur Williams, chief engineer, Superheater Company

Report of Technical Committee on Locomotives, by Lawford H. Fry, director of research, The Locomotive Institute

12:30 p.m.

Railroad luncheon.

2:30 p.m.

Railroad (III)

Load-Compensating Air Brakes, by C. D. Stewart, director of engineering, Westinghouse Air Brake Company

Critical Shearing Stress in Skin-Stressed Box-Car Sides, by V. L. Green and J. J. Drinka, engineering department, C. M. St. P. & P.

Passenger-Car Trucks, by K. F. Nystrom, mechanical assistant to chief operating officer, C. M. St. P. & P.

Freight-Car Trucks, by R. B. Cottrell, chief mechanical engineer, American Steel Foundries

Safety—Management (VII)

What Engineering Societies Can Do To Encourage Safety Education in Technical Colleges and High Schools, by Walter Cutter, Center for Safety Education, New York University

The Hiring of Handicapped Military Personnel, by Michael Supa, International Business Machines Corporation

Panel Discussion on Training for Safe Machine Operation. Discussion leader: S. W. Mudge, War Manpower Commission. Members of Panel: R. S. Bonsib, Standard Oil Company; A. G. Bugenstock, Western Electric Company; William Heinrich, Travelers Insurance Company; W. H. Hollis, Sperry Gyroscope Co., Inc.; F. C. Lillenthal, American Type Foundries; W. H. Richardson, Air Reduction Sales Company

8 p.m.

Education of Returning Service Men

A Pattern for the Broadening Elements of the Curriculum, by Dean C. J. Freund, University of Detroit

Apprentice Training After the War, by William F. Patterson, director of apprentice training service, War Manpower Commission

Technical Institute Training, by Mark Ellingson, president, Rochester Institute of Technology.

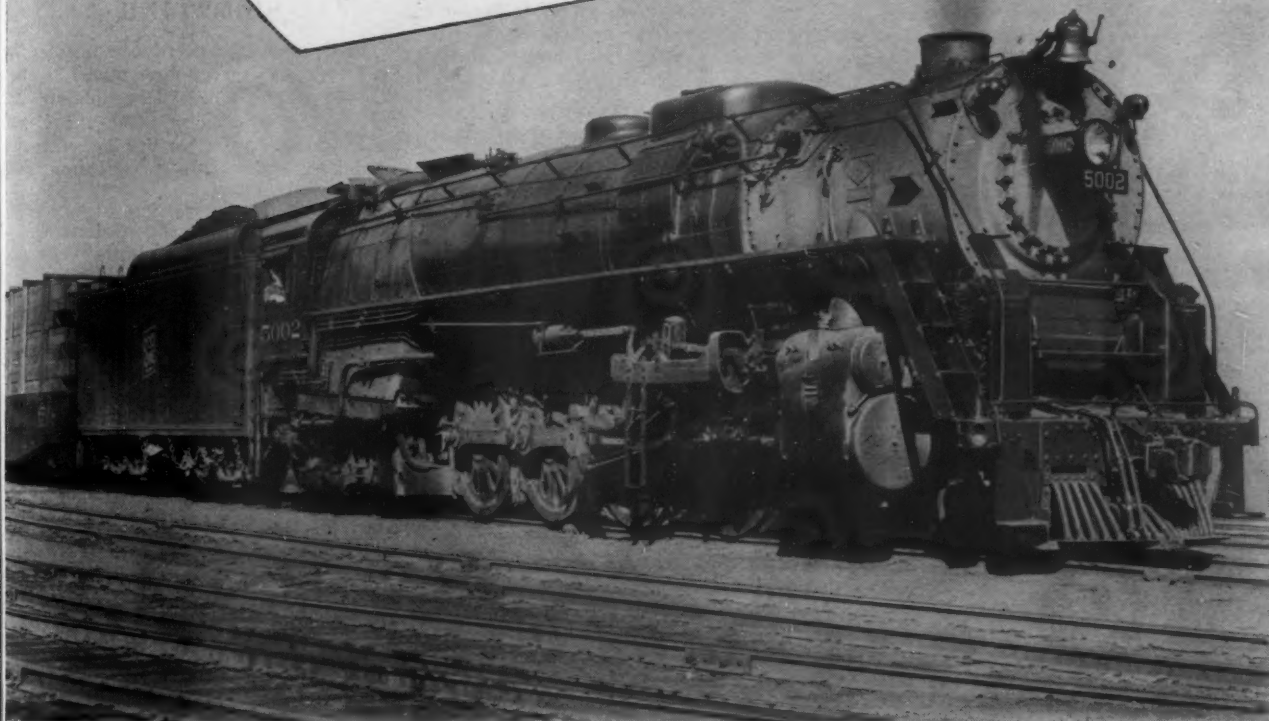
### Air Freight Classification and Tariffs Are Published

American Airlines, Inc., has distributed a limited de luxe edition of a booklet entitled "Here Comes Air Freight" to leading industrial traffic men. An interesting feature is that there is bound into the volume a copy of American Airlines "Air Freight Classification No. 1" which sets forth all the classifications, rules and regulations applicable to air freight.

With the classification there also appears A. A. "Air Freight Tariff No. 1" naming



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TRANSPORTATION**  
*will be the Post-War Demand*



To meet the post-war transportation problem of moving freight both more rapidly and more economically, modern equipment will be an absolute essential.

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haul heavy trains at high speeds on long runs.

Lima Super-Power 4-8-4s are built for just such work and have already thoroughly proved their capacity for maintaining exacting schedules in the handling of both freight and passenger traffic.



**LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO**

local class and commodity rates from and to 43 points served by the company with a simple and ingenious use of rate scale numbers to obviate the use of specific rates between each point involved.

The classification establishes four classes to cover all commodities. For a 1,500-mile haul charges would be as follows, including truck pick-up and delivery:

Class A—\$41.70 per 100 lb.  
Class B—\$36.10 per 100 lb.  
Class C—\$30.40 per 100 lb.  
Class D—\$24.80 per 100 lb.

Minimum weight of 25 lb.; minimum distance: 450 miles.

The brochure explains that "airfreight" is not intended to supplant Air Express since it is a "deferred service."

### September Accident Statistics

The Interstate Commerce Commission on November 7 made public its Bureau of Transport Economics and Statistics' preliminary summary of steam railway accidents for September and this year's first nine months. The compilation, which is subject to revision, follows:

Item	Month of September		9 months ended September	
	1944	1943	1944	1943
Number of train accidents*	1,285	1,252	12,136	12,158
Number of casualties in train train-service and nontrain accidents:				
Trespassers:				
Killed .....	139	132	1,183	1,382
Injured .....	126	105	893	1,071
Passengers on trains:				
(a) In train accidents:				
Killed .....	35	76	125	130
Injured .....	240	247	1,288	1,707
(b) In train-service accidents:				
Killed .....	8	6	48	40
Injured .....	235	210	2,163	2,058
Travelers not on trains:				
Killed .....	1	9	9	9
Injured .....	90	78	770	824
Employees on duty:				
Killed .....	70	77	735	727
Injured .....	3,901	3,817	35,003	33,815
All other nontrespassers:**				
Killed .....	155	131	1,381	1,371
Injured .....	475	630	4,788	4,864
Total—All classes of persons:				
Killed .....	408	422	3,481	3,659
Injured .....	5,067	5,087	44,905	44,339

\* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than \$150 to railway property.

\*\* Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and nontrespassers, were as follows:

Persons:				
Killed .....	137	118	1,235	1,167
Injured .....	252	379	2,742	2,799

### Lower Wool Rates Sought

The Secretary of Agriculture and War Food Administrator have announced the filing of a petition with the Interstate Commerce Commission seeking a general investigation with a view toward lowering present allegedly "grossly inequitable" freight rates on wool "in the grease" in bags. It was said that 25 state regulatory commissions and departments of agriculture joined in endorsing the petition, and that the action was supported by 41 wool growing and marketing groups.

The present action amounts to a request for reinstatement of an earlier proceeding that was postponed "due to a variety of war conditions," it was explained. The

case so referred to was the commission's No. 28863 proceeding, instituted in 1942 after a complaint had been filed by the Secretary of Agriculture, and discontinued a year later, as noted in *Railway Age* of August 21, 1943, page 325.

### Notes '44 Emphasis on Freight Diesels

(Continued from page 734)

neous obligations in the tabulation." Neither was it found possible "to offer any reasonable explanation why the nominal rates of mortgage bonds, debentures and miscellaneous obligations should be lower for switching and terminal companies than for the Class I roads or their lessors." In that connection, however, it is suggested that the switching and terminal companies "may perhaps have a higher proportion of first lien than of junior mortgage bonds as compared with the other two classes, which would presumably tend to reduce the average rate of the former."

**Pipe Lines Move More Oil**—Discussing the "shifting utilization of petroleum transportation facilities," the Bureau points out that in the first three quarters of this year the pipe-line movement to the east-coast area closely approached the rail movement, totaling nearly 176 million barrels or 37.8 per cent of the total as compared with the rail movement of 188 million barrels or 40.6 per cent of the total. It is recalled that the rail movement in 1941, when tankers carried 92.4 per cent of the total, accounted for only 2.25 per cent; but the railroads bore the chief burden in 1942 and 1943, carrying 51.6 per cent and 61.2 per cent, respectively.

Returns of 53 freight forwarders reporting to the commission for the first six months of this year are summarized, the figures showing that the companies had for that period a composite deficit in net income before taxes of \$334,000, compared with a net income of \$2,824,000 for the first half of 1943. The deficit after taxes in this year's first half was \$562,000, compared with a net after taxes of \$1,673,000 in the like 1943 period.

### B. & O. Affiliate Gets Forwarder Permit

The Interstate Commerce Commission, Division 4, has issued to General Carloading Company, Inc., a permit authorizing continuance of operations as a freight forwarder of commodities generally between all points in the United States, except those located in the states Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina and Tennessee. The report in No. FF-37 noted that "fifty per cent of the voting stock of applicant is owned by the Baltimore & Ohio."

### Club Meetings

"What's the Matter With the Car Department" is the subject to be discussed by LeRoy Kramer, first vice-president, General American Transportation Corporation, when the Car Department Association of St. Louis meets at 8:00 p.m., November 21, in Hotel DeSoto, in that city. This is to be the "Annual Honor Night."

## Equipment and Supplies

### LOCOMOTIVES

The ALTON, on November 6, was authorized by the federal district court at Chicago to purchase three Diesel-electric passenger locomotives, for use between Chicago and St. Louis, Mo., from the Electro-Motive Division of General Motors Corporation at a cost of \$349,220 each. The petition stated that the locomotives will effect a yearly saving of \$25,000, will release three steam locomotives, and will facilitate the handling of passenger and mail traffic between the two cities.

### SIGNALING

The CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS has ordered three model 31 electro-pneumatic car retarders, totaling 337 rail feet of retardation, from the Union Switch & Signal Co. for installation in the westbound Sharonville classification yard at Cincinnati, Ohio.

The BOSTON & MAINE has ordered equipment from the General Railway Signal Company for the power operation of a crossover to be controlled by an additional lever on the existing centralized traffic control machines at Fitchburg, Mass. Among the items ordered are two model 5D dual control switch machines, a three arm type SA searchlight signal, and a number of type K relays.

The CHICAGO, ROCK ISLAND & PACIFIC will install automatic block signals between Albright, Neb., and Simon, Colo., a distance of 486 mi., at a cost of \$797,000 to expedite the movement of traffic from Chicago and Kansas City, Mo., to Denver and Colorado Springs, where connections are made for Pacific Coast ports. The project will be started as soon as materials are obtained and signal crews are available.

The CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has placed orders with the Union Switch & Signal Co. covering materials for the installation of automatic block signals and three all-relay electric interlocking plants between Birmingham, Mo., and Air Line Junction, on the main line from Kansas City to Chicago. The all-relay interlockings will be located at Birmingham River Bridge and West Wye, with all the functions thereof controlled from Union B-30 control machines. In addition to the control machines, the order includes style H-2 searchlight signals, style M-2 low voltage electric switch machines, electric switch locks, relays, rectifiers and housings. The railroad signal forces will do the construction work.

The BOSTON & MAINE has ordered equipment from the General Railway Signal Company to rehabilitate an interlocking at Tower FA, Lawrence, Mass., and to replace interlocking Tower JK with a building containing the required relays to operate that interlocking by unit-wire remote control from a control machine to be



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**... FOR**



**4-8-4's**



## Franklin Type "E" BOOSTERS GIVE INCREASED CAPACITY

The Soo Line has applied Franklin Type E Boosters to its 5000 Class 4-8-4 locomotives and thereby gained a substantial increase in capacity.

The additional power provided by the Franklin Booster permits the hauling of heavier trains over the severe grade out of Minneapolis.

On the road the Booster aids the lo-

comotive in maintaining its schedule by furnishing extra power to move in and out of sidings, to accelerate quickly to road speed, and for other grades and tight spots.

These advantages can be secured by any railroad through the application of Franklin Type E Boosters to its locomotives.



**FRANKLIN RAILWAY SUPPLY COMPANY, INC.**

NEW YORK • CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

installed in Tower FA. The equipment ordered includes 8 model 5D dual-control switch machines, 10 type SA dwarf signals, 3 type SA 3 unit ground signals, 2 type SA 2 unit ground signals, 1 type SA 3 unit bridge signal, 21 housings, the necessary type K relays, and a sectional type, pedestal model control machine with 2 rotary signal levers, 6 rotary switch levers and 7 track indication lights.

## Supply Trade

**John A. English**, sales engineer of the **Carnegie-Illinois Steel Corporation**, Chicago, has been promoted to assistant manager of railroad materials sales.

**A. M. Buxton** has been appointed assistant sales manager of the **Cooper-Bessemer Corporation** with headquarters at Mt. Vernon, Ohio.

**Harold F. Allen** has been appointed chief engineer for the **Link-Belt Speeder Corporation** and will divide his time between the Chicago and Cedar Rapids, Iowa, plants. Mr. Allen became a member of the Link-Belt locomotive crane division in 1916.

**Samuel A. Schaeffer** has resigned as vice-president and general superintendent of the **Clarage Fan Company** of Kalamazoo, Mich., to become active president of the **Durametallic Corporation** of Kalamazoo. Mr. Schaeffer had served as president and chairman of the board of the Durametallic Corporation for many years prior to his new association in an active capacity.

**C. P. Judge**, an engineer of the **Westinghouse Electric & Manufacturing Company**, with headquarters at Wheeling, W. Va., has resigned to become divisional manager of the Pittsburgh district of the Gould Commercial division of the **National Battery Company**. **Leslie E. Howard** has been appointed sales engineer for the Spokane and Salt Lake City territories of National and **A. J. Miller** has been made sales engineer for the Detroit district.

The Henry Marion Howe Medal of the American Society for Metals has been awarded to three members of the staff of the **American Brake Shoe Company's** metallurgical laboratory at Mahwah, N. J., **Earnshaw Cook**, chief metallurgist; **J. A. Fellows**, assistant chief metallurgist and **R. A. Flinn**, assistant metallurgist, for the best paper to appear in the Society's publication "Transactions." The metallurgists' paper described a quantitative study of the transformation reaction of steel from high to low temperatures as related to heat treating practices.

Plans for a large expansion in its production and sale of high-strength, low-alloy steels to meet anticipated post-war demands for light-weight equipment in the transportation field were announced on November 3 by the **Republic Steel Corporation**. **N. J. Clarke**, vice-president in charge of sales, stated that Republic has acquired license rights for the manufacture of "Cor-Ten" and "Aldecor" steels, which it will

market in addition to its own trademarked product, "Republic Double Strength Steel." "Cor-Ten" is a patented steel produced by Carnegie-Illinois Steel Corporation, and other subsidiaries of the United States Steel Corporation, and "Aldecor" was the result of research by the Alloys Development Corporation of Pittsburgh, Pa., and was developed by the Republic Steel Corporation.

**C. D. Allen** has been appointed transportation sales engineer for the Pacific Coast district sales office of the **Baldwin Locomotive Works** at San Francisco, Cal. Mr. Allen has been in charge of inspection and field service for steam and electric locomotives for Baldwin at Philadelphia, Pa., for the past three years. Previously, he had been associated with the Central Vermont,



C. D. Allen

the Canadian Pacific and the Canadian National for 12 years and with Manning, Maxwell & Moore, Inc., and the J. S. Coffin Jr. Company, from 1926 to 1941.

## OBITUARY

**Enoch Bostrum**, who has been associated with the Osmose Wood Preserving Company of America, Buffalo, N. Y., since 1935, died October 21. He was the inventor of that company's product, known as Osmoplastic.

## Financial

**ARCATA & MAD RIVER.—Deficit Status.**—Division 4 of the Interstate Commerce Commission, with Commissioner Mahaffie dissenting without comment, has found this road not entitled to benefit under section 204 of the Transportation Act of 1920, amended, and has dismissed its claim for compensation amounting to \$72,401 on account of losses claimed as resulting from federal control of railroads in and following World War I. In its report on reconsideration, the division departed from an earlier finding and held the road to be a common carrier engaged in general transportation, but it found that accounting "abnormalities," benefiting the lumber company

which controlled the road, "make the claim foreign to the intent of the statute."

**BALTIMORE & OHIO.—Acquisition.**—This road has applied to the Interstate Commerce Commission for authority to acquire by purchase all properties of the Toledo & Cincinnati, Hamilton Belt, and Lima Belt. The applicant, which operates the properties involved as integral parts of its system, owns all the capital stock of Toledo which in turn owns Hamilton and Lima. The acquisitions are expected to effect savings in bookkeeping, taxes, and other expenses incident to the maintenance of separate corporations.

**CANADIAN NATIONAL.—New Director.**—Ralph B. Brennan, of St. John, N. B., managing director and treasurer of the T. H. Estabrooks Company of that city, vice-president of the Maritime Board of Trade for the past three years and vice-president of the Canada Chamber of Commerce for the past two years, has been appointed to the board of directors to fill the vacancy created by the resignation of Charles H. Reid of Amherst, N. S.

**CHESAPEAKE & OHIO.—Equipment Trust Certificates.**—This company has applied to the Interstate Commerce Commission for authority to assume liability for \$3,600,000 of its sixth equipment trust of 1944 certificates and not for \$600,000 of these certificates as was reported incorrectly in the *Railway Age* of November 4, page 707.

**CHICAGO, BURLINGTON & QUINCY.—Equipment Trust Certificates.**—Division 4 of the Interstate Commerce Commission has authorized this company to assume liability for \$1,520,000 of 1½ per cent equipment trust of 1944 certificates, sold at 100.13 to the First National Bank of Chicago and others, in connection with the purchase, at an aggregate cost of \$1,727,000, of 22 Diesel-electric switching locomotives.

**CHICAGO, BURLINGTON & QUINCY.—Bonds.**—This company has advised the Interstate Commerce Commission that, subject to the commission's approval, it has accepted the bid of Morgan Stanley & Co. for its \$40,000,000 issue of first and refunding mortgage bonds, due in 1974, the proceeds of which are to be applied to the redemption of outstanding series A 5 per cent first and refunding mortgage bonds. The new issue, to carry a 3¼ per cent interest rate, was sold at 99.137. The bonds were reoffered for sale to the public at 100¾, to yield 3.71 per cent to maturity. (Previous item in *Railway Age* of August 26, page 357.)

**CHICAGO & NORTH WESTERN.—Dividend.**—A dividend of \$5 a share on the common stock of the North Western, payable from earned surplus accumulated since January 1, 1939, the effective date of reorganization, was declared by the board on November 2. At the same time, the board declared a dividend of \$5 a share on the preferred stock for the current year and authorized an additional payment of \$5,000,000 to the Reconstruction Finance Corporation. The common dividend is the first since 1931 when the predecessor company paid \$2 a share. An initial dividend of





Photograph Courtesy of  
Chesapeake & Ohio Railway Co.

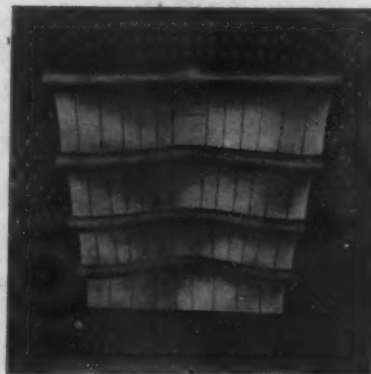
*in making efficient use of every ton of coal!*

- For 35 years you have been using Security Sectional Arches to save fuel.

Today that function is more important than ever before.

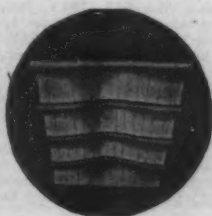
When you burn a ton of coal today you are burning the man-hours used in mining, transporting and handling it, to say nothing of the equipment involved.

Today coal conservation takes on a new importance. One way to further it is to see that every locomotive leaving the roundhouse has a complete arch in its firebox.



**HARBISON-WALKER  
REFRACTORIES CO.**

**Refractory Specialists**



**AMERICAN ARCH CO.  
INCORPORATED**

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**Locomotive Combustion  
Specialists**

\$15 a share was paid on September 1 on the preferred stock, the equivalent of \$5 a share earned in each of the years 1941-43. Both dividends declared on November 2 are payable December 30 to stockholders of record on December 1. The authorized payment to the R. F. C. will reduce the railway's indebtedness to that agency to approximately \$6,250,000.

**CHICAGO, ROCK ISLAND & PACIFIC.—R. F. C. Loan.**—The Federal District Court at Chicago on November 8 authorized the trustees of the Chicago, Rock Island & Pacific to pay the road's obligation to the Reconstruction Finance Corporation, totaling \$13,718,700 and interest of \$5,000,000. Objectors to the payment have 40 days in which to appeal from the order.

**DENVER & RIO GRANDE WESTERN.—Court Confirms Plan.**—On November 1, the United States district court confirmed the reorganization plan of this railroad, over the objection of the general mortgage bondholders. The plan had been approved by the Interstate Commerce Commission and by various classes of creditors, with the exception of the general mortgage bondholders.

**DENVER & RIO GRANDE WESTERN—WESTERN PACIFIC.—Lease of Salt Lake Union Depot.**—Division 4 of the Interstate Commerce Commission has authorized the Denver & Rio Grande Western and Western Pacific, joint owners of the capital stock of the Salt Lake City Union Depot & Railroad, to continue joint use of the properties of the subsidiary under the terms of a new 20-year agreement.

**KANSAS CITY SOUTHERN.—Acquisition of Subsidiaries.**—On October 31, a special meeting of stockholders approved the acquisition of seven subsidiary companies, the capital stock of which is owned by the Kansas City Southern. (See previous item in *Railway Age* of September 30, page 532.)

**MIDDLETOWN & UNIONVILLE.—Plans Reorganization.**—On November 3, the Middletown & Unionville filed a proposed plan of reorganization in the federal district court in New York. Under the plan, which is subject to approval by the Interstate Commerce Commission, \$165,000 in adjustment mortgage bonds and 1,500 shares of common stock will be cancelled because of lack of equity. Holders of \$185,000 of first mortgage bonds, with unpaid interest of \$68,604 accrued to August 31, 1944, will receive seven new common shares of \$100 par value for each \$1,000 bond held.

**MISSOURI PACIFIC.—Reorganization Hearing.**—The United States district court at St. Louis, Mo., has set January 8 for hearings on the company's reorganization plan. Objections to the plan must be filed by November 25.

**ST. LOUIS-SAN FRANCISCO.—Reorganization.**—A petition filed by the St. Louis-San Francisco in the Federal District court at St. Louis, Mo., on November 3, asked that the reorganization plan, approved by the Interstate Commerce Commission last July be referred back to the Commission and that a "more equitable" plan be evolved. An earlier plan was rejected by the court and returned to the Commission in July,

1942. The petition termed the present plan "unjust, inequitable and failing to afford due recognition of the rights of the stockholders." It contended that the plan failed to conform to law regarding participation of various classes of creditors, including the debtor and stockholders, in the securities of the company.

**NEW YORK CENTRAL.—Bond Redemption.**—Directors of this company have voted to call for redemption at 102½ all of its outstanding 15-year secured 3¼ per cent bonds, due 1952. Some \$24,000,000 of this issue is outstanding.

**Dividend.**—Directors have declared a dividend of \$1 on the company's capital stock, bringing payments this year to a total of \$2.50—compared to \$1.50 in 1943.

**SEABOARD AIR LINE.—Bond Groups Approve Plan.**—Protective committees representing 12 bond issues have given official notice of the adoption and approval of the Seaboard Air Line's reorganization plan. Bonds not withdrawn from deposit with the committees by December 1 will be bound by the terms of the plan. The reorganization committee has asked the court to direct receivers to pay approximately one half of the four years' back interest, payable in cash under the plan, on the Carolina Central first mortgage bonds and the Florida Central & Peninsular first consolidated mortgage bonds. The reorganization committee also is asking the court to direct the purchase, at principal and accrued interest, of all first mortgage bonds of the Tampa Northern, also payable in cash under the plan. The petition will be heard November 10.

**SOUTHERN PACIFIC.—Central Pacific Bonds.**—The Central Pacific has applied to the Interstate Commerce Commission for authority to issue to the Southern Pacific Company \$10,000,000 of 4 per cent Through Short Line bonds, due in 1975, to reimburse it for retirement of an equal principal amount of 4 per cent Through Short Line first mortgage bonds due in 1954, which were called for redemption October 1.

## Average Prices Stocks and Bonds

	Nov. 8	Last week	Last year
Average price of 20 representative railway stocks...	42.37	42.07	34.29
Average price of 20 representative railway bonds...	90.78	90.41	78.10

## Dividends Declared

Alabama Great Southern.—ordinary, \$4.50, ordinary preferred, \$4.50, both payable December 20 to holders of record November 14.  
 Boston & Albany.—\$2.25, payable December 30 to holders of record November 30.  
 Catawissa.—1st and 2nd preferred, 75¢, semi-annually, payable November 23 to holders of record November 6.  
 Chestnut Hill.—75¢, quarterly, payable December 4 to holders of record November 20.  
 Chicago & Northwestern.—5% preferred vtc. (year-end) \$5.00; common, \$5.00, both payable December 30 to holders of record December 1.  
 Cincinnati, New Orleans & Texas Pacific.—common, \$4.00, payable December 18 to holders of record December 6; 5% preferred, \$1.25, quarterly, payable March 1, 1945, June 1, 1945, September 1, 1945, and December 1, 1945, to holders of record February 15, 1945, May 15, 1945, August 15, 1945, and November 15, 1945, respectively.  
 Cleveland & Pittsburgh.—87½¢, quarterly; special guaranteed, 50¢, quarterly, both payable December 1 to holders of record November 10.  
 Pittsburgh, Bessemer & Lake Erie.—6% preferred, \$1.50, semi-annually, payable December 1 to holders of record November 15.  
 Troy & Greenbush.—\$1.75, semi-annually, payable December 15 to holders of record December 1.

# Railway Officers

## Railway Men Commissioned in Transportation Corps

In recent weeks, a number of railway officers have been commissioned as lieutenant colonels or majors in the Transportation Corps and called immediately to active duty in France. The list, with their former railway connections, follows:

F. G. Cook, superintendent, Northern Pacific, Spokane, Wash.—*lieutenant colonel*.  
 F. R. Doub, superintendent, C. M. St. P. & P., Aberdeen, S. D.—*lieutenant colonel*.  
 R. R. Badgley, term. supt., S. P., San Francisco, Cal.—*lieutenant colonel*.  
 H. F. NEVILLE, trainmaster, N. Y. Central, Suspension Bridge, N. Y.—*lieutenant colonel*.  
 G. C. STUART, asst. supt., C. & N. W., Fond du Lac, Wis.—*lieutenant colonel*.  
 G. C. WHITE, superintendent, Erie, Buffalo, N. Y.—*lieutenant colonel*.  
 J. G. WOODALL, trainmaster, Southern, Hattiesburg, Miss.—*lieutenant colonel*.  
 E. E. AMBERG, trainmaster, Pere Marquette, Saginaw, Mich.—*major*.  
 C. W. MCKNIGHT, chief dispatcher, C. of Ga., Savannah, Ga.—*major*.  
 W. R. ARMSTRONG, Jr., chief engineer, Nev. Northern, East Ely, Nev.—*lieutenant colonel*.  
 C. E. CRIPPEN, trainmaster, C. M. St. P. & P., Milwaukee, Wis.—*lieutenant colonel*.  
 H. W. JENSEN, division engineer, C. St. P. M. & O., St. Paul, Minn.—*lieutenant colonel*.  
 L. ROSSMAN, division engineer, Erie, Huntington, Ind.—*lieutenant colonel*.  
 H. L. WOLDRIDGE, division engineer, Frisco, Ft. Scott, Kans.—*lieutenant colonel*.  
 D. T. PARRISH, asst. to chief engineer, Clinchfield, Erwin, Tenn.—*major*.

## EXECUTIVE

Kenton C. Underwood, vice-president and general manager of the Merchants Despatch Transportation Corporation, and the Northern Refrigerator Line, Inc. (subsidiaries of the New York Central), has been promoted to executive vice-president, with headquarters as before at Chicago. Floyd W. Crow, general superintendent at Chicago, has been advanced to vice-president and general manager, with the same headquarters, succeeding Mr. Underwood. Frank C. Mohr, auditor, has been promoted to vice-president, with headquarters as before at Chicago.

## FINANCIAL, LEGAL AND ACCOUNTING

Strother Hynes has been appointed assistant general solicitor of the Chesapeake & Ohio at Richmond, Va.

W. D. Moore has been appointed claim agent of the Clinchfield with headquarters at Erwin, Tenn.

W. O. Reed has been appointed assistant general attorney of the Texas & Pacific, with headquarters at Dallas, Tex.

Louis Frandsen, supervisor of the land department of the Southern Pacific, has been promoted to assistant land commissioner, with headquarters as before at San Francisco, Calif.

H. E. Goodwin has been appointed land and tax commissioner of the Fort Worth & Denver City and of the Wichita Valley, with headquarters at Fort Worth, Tex., succeeding C. E. Nottingham, whose pro-

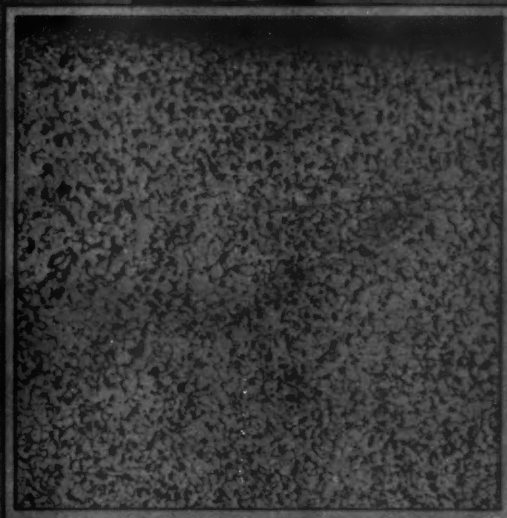


# Seeing is Believing



One piece to the  
naked eye

One piece under  
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Montreal, Canada  
THE SUPERHEATER COMPANY, LTD.

motion to auditor of disbursements, with headquarters at Fort Worth, was reported in the *Railway Age* of November 4.

**A. M. Dryer**, chief clerk of the auditor of passenger and station accounts, of the Chicago, Milwaukee, St. Paul & Pacific, has been promoted to auditor of passenger accounts, with headquarters as before at Chicago. **W. P. Heuel**, auditor of overcharge claims, has been advanced to auditor of station accounts and overcharge claims, with headquarters as before at Chicago.

**Clift R. Taylor**, chief clerk and accountant of the Merchants Despatch Transportation Corporation and the Northern Refrigerator Line, Inc. (subsidiaries of the New York Central), has been advanced to auditor at Chicago, succeeding **Frank C. Mohr**, whose promotion to vice-president at Chicago is announced elsewhere in these columns.

## OPERATING

**J. T. Mitchell**, road foreman of engines of the Seaboard Air Line at Howells, Ga., has been appointed assistant superintendent, South Florida division, with headquarters at Tampa, Fla.

**R. G. Harrison** has been appointed acting trainmaster, Montreal terminals and St. Jerome division, of the Canadian National, with headquarters at Longue Pointe, Ont., succeeding **N. A. Levia**, who has been transferred.

**R. A. Gleason**, trainmaster of the Indianapolis division of the New York, Chicago & St. Louis at Peru, Ind., has been promoted to terminal supervisor, with headquarters at Cleveland, Ohio. **H. R. Scott** has been appointed trainmaster at Peru, replacing Mr. Gleason.

**Philip F. Prentiss**, assistant trainmaster of the Western Pacific at Sacramento, Cal., has been promoted to trainmaster, with headquarters at Stockton, Cal. **Henry Stapp**, who has been released from active service with the armed forces of the United States, has returned to his position of trainmaster, with headquarters also at Stockton.

**C. D. Moss**, superintendent of the Clinchfield at Erwin, Tenn., has been appointed general superintendent there with jurisdiction over the transportation, car service, claims, and industrial and rental departments. **W. T. Wohlford** succeeds Mr. Moss as superintendent at Erwin. **J. F. Meredith** has been appointed trainmaster at Dante, Va. The position of assistant general manager has been abolished.

**Howard Hartman Sparling**, general superintendent of the Canadian National at Edmonton, Alta., has been named chief of transportation at Montreal, Que., succeeding **J. W. Wardlaw**, whose death was reported in the *Railway Age* of November 4. Mr. Sparling, a native of Ontario, was born on November 18, 1883, and entered railroad service in September, 1901, as an operator on the Grand Trunk. He joined the Canadian Pacific as an operator in August, 1906, and then returned to the Grand Trunk in the same capacity the following January.

He served as dispatcher for the Grand Trunk Pacific (now the Canadian National) at Ft. William and Sioux Lookout, Ont., from July, 1911, to June, 1924, when he became chief dispatcher of the Canadian National. From 1929 to 1937 he occupied various supervisory positions at Winnipeg,



Howard H. Sparling

Man., and was appointed superintendent of transportation at Edmonton in April, 1937. Two years later he was named superintendent of the Edmonton division, and in May, 1942, he was advanced to general superintendent of the Saskatchewan district. He was transferred to Edmonton as general superintendent of the Alberta district last February, and remained in that post until his recent appointment as chief of transportation at Montreal.

**J. J. Stein**, special representative of the vice-president in charge of operations of the Chicago & North Western, has been promoted to general superintendent of the dining car department, with headquarters as before at Chicago. **E. E. Lorenz**, assistant superintendent of dining and parlor cars at Chicago, has been advanced to superintendent of the dining car department, with the same headquarters. **C. H. Shircliffe**, superintendent of dining and parlor cars, with headquarters at Chicago, has retired after 50 years of service.

## TRAFFIC

**C. I. Allen**, general agent of the Atlantic Coast Line at Lake Wales, Fla., has been transferred to Clewiston, Fla.

**J. A. Kane** has been appointed assistant to the freight traffic manager of the Seaboard Air Line at Norfolk, Va.

**L. C. Hollingsworth**, assistant general freight agent of the Gulf, Mobile & Ohio, with headquarters at Mobile, Ala., has retired after 50 years of service.

**B. F. McCoy** has been appointed general agent, traffic department, of the Chicago, South Shore & South Bend, with headquarters at Detroit, Mich.

**Willoughby F. Richardson**, freight traffic manager of the Baltimore & Ohio at New York, has retired after 47 years of service, and **Paul S. Phenix**, assistant

freight traffic manager at New York, has been named to succeed him. **Harry Atkinson**, general freight agent with headquarters at New York, has been appointed assistant freight traffic manager succeeding Mr. Phenix.

**E. F. McWilliams**, traveling passenger agent of the Missouri-Kansas-Texas, has been promoted to general agent, with headquarters as before at Chicago.

**W. M. McCullough**, district passenger agent of the Southern at Philadelphia, Pa., has been promoted to assistant general passenger agent with the same headquarters.

**S. S. McKinlay**, coal traffic representative of the Baltimore & Ohio at Pittsburgh, Pa., has been promoted to coal freight agent, with headquarters at Chicago, succeeding **H. G. Allen**, who has resigned.

**Arthur W. Fetter**, assistant general agent of the Chicago, Rock Island & Pacific at Milwaukee, Wis., has been promoted to general agent with the same headquarters, succeeding **W. T. Baldwin**, whose recent death is reported elsewhere in these columns.

In the November 4 issue of *Railway Age* it was incorrectly stated that **James W. Lawson**, general agent, freight department, of the Reading at Cincinnati, Ohio, had been appointed general coal freight agent at Philadelphia, Pa. **J. Warren Lawson**, general freight and passenger agent of the Pennsylvania-Reading Seashore Lines, has been appointed general coal freight agent of the Reading at Philadelphia, while **James W. Lawson** remains general agent of the Reading at Cincinnati.

**Joseph A. Fisher**, whose appointment as general freight traffic manager of the Reading at Philadelphia, Pa., was announced in the *Railway Age* of November 4, was born in 1895 and received a degree in civil engineering from Lehigh University in 1917. He entered railroading with the Reading as



Phillips Studio

Joseph A. Fisher

a special agent on October 1, 1921, and the following year was named freight traffic representative. He served as chief clerk to the vice-president in charge of freight traffic from January, 1925, to the following December, when he became foreign freight agent



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## ELECTRO-MOTIVE DIVISION

GENERAL MOTORS CORPORATION

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in charge of import and export coastal and inter-coastal shipments. In May, 1928, he was appointed assistant general freight agent, and in April, 1935, was advanced to general freight agent. The following year Mr. Fisher became assistant freight traffic manager, and he was promoted to freight traffic manager at Philadelphia in April, 1939, the position he held at the time of his recent appointment as general freight traffic manager.

**Thomas H. Irwin**, general freight agent of the Jersey Central Lines at New York, has been appointed assistant freight traffic manager there, and his former position has been abolished. Mr. Irwin was born at Mickleton, Gloucester County, N. J., and entered railroad service in May, 1902, as a clerk in the general auditor's office of the Central of New Jersey at Philadelphia, Pa. He served as traveling auditor from November 11, 1907, to July 15, 1926, when he was named lighterage agent in the marine department. In August, 1935, he became general freight agent in the freight traffic department of the Central of New Jersey



**Thomas H. Irwin**

and the Reading, and he remained in that post until January 1, 1939, when he was appointed general freight agent of the Central of New Jersey at New York, the position he held at the time of his recent promotion to assistant freight traffic manager.

**William Armistead Huse**, assistant freight traffic manager of the Norfolk & Western at Roanoke, Va., has retired after 54 years of service. Born at Roanoke, Mr. Huse entered railroad service as a clerk on the Shenandoah Valley (now part of the Norfolk & Western) in May, 1890, and then joined the Great Southern Dispatch, an associate line of the Norfolk & Western, in 1896. From October 1, 1899, until May 1, 1905, he served with the Norfolk & Western as a clerk in the office of the general freight agent, thereafter returning to the Great Southern Dispatch as chief clerk. He rejoined the Norfolk & Western in June, 1909, as chief clerk to the general freight agent and progressed successively to the positions of chief rate clerk, chief clerk to the general freight agent, division freight agent, and coal freight agent. On April 1, 1937, Mr. Huse was named assistant freight traffic manager, the position from which he has now retired.

## ENGINEERING & SIGNALING

**R. C. Davidson**, assistant division engineer of the Canadian National, has been promoted to division engineer of the Smithers division, with headquarters at Prince Rupert, B. C., succeeding **M. A. Burbank**, who has retired.

**W. E. Griffiths** has been appointed division engineer of the Canadian National, Ottawa division, at Ottawa, Ont., succeeding **W. H. B. Bevan**, whose appointment as district engineer of the Northern Ontario district was reported in the *Railway Age* of September 23.

**V. H. Doyle**, valuation engineer of the Pere Marquette at Detroit, Mich., has been advanced to office engineer in the office of the chief engineer, with the same headquarters, succeeding to the duties of **Paul Chipman**, who has retired from active service at his own request. Mr. Doyle will continue as valuation engineer.

**S. L. Van Akin**, joint superintendent of telegraph of the New York Central System with headquarters at Detroit, Mich., has retired, and **C. E. Baxter** has been appointed to succeed him there. **G. L. Miller** has been appointed joint assistant superintendent, telegraph, of the System at Syracuse, N. Y., and **T. S. Christy** has been appointed joint assistant superintendent, telegraph, at Cincinnati, Ohio.

## MECHANICAL

**Thomas P. Dugan** was recently appointed general supervisor, boiler inspection and maintenance, of the Delaware & Hudson.

**W. Stewart** has been appointed district master mechanic of the Manitoba district of the Canadian Pacific, with headquarters at Winnipeg, Man., succeeding **A. J. Pentland**, who has retired.

**Otto J. Protz**, superintendent of motive power of the Chicago & North Western at Chicago, has been appointed superintendent of motive power and machinery of the Chicago, St. Paul, Minneapolis & Omaha (part of the North Western System), with headquarters at St. Paul, Minn., succeeding **E. R. Gorman** who has retired.

Mr. Gorman was born on December 3, 1879, at Gorman Town, Minn. He entered railway service in April, 1900, as a locomotive fireman on the Chippewa Valley & Northern, a road owned and operated by the Arpin Hardwood Lumber Company, Bruce, Wis. In September, 1901, he became a locomotive fireman on the Western division of the Omaha. He was promoted to engineman and transferred to the Northern division in February, 1907, but left the company's service in May, 1908, to go with the Northern Pacific, working out of Missoula, Mont. In May, 1912, Mr. Gorman was appointed traveling engineer on the Northern division of the Omaha, with headquarters at Spooner, Wis., and served in this position until December, 1915, when

he was promoted to trainmaster on the same division. In May, 1917, he was made acting assistant superintendent of the Western division, with headquarters at St. James, Minn., this temporary promotion being made permanent in November, 1917. In 1919 he was transferred to the Eastern division, with headquarters at Eau Claire, Wis., and one year later he was advanced to the position he held at the time of his retirement.

## PURCHASES AND STORES

**D. E. Dawson**, acting general storekeeper of the Gulf, Mobile & Ohio, has been promoted to general storekeeper, with headquarters as before at Mobile, Ala., succeeding **G. H. Therell**, who died recently.

## OBITUARY

**W. T. Baldwin**, general agent of the Chicago, Rock Island & Pacific, with headquarters at Milwaukee, Wis., died at his home in that city recently.

**Thomas H. Lawrence**, who retired in 1930 as general passenger agent of the St. Louis Southwestern, with headquarters at Tyler, Tex., died in a hospital in that city recently.

**Charles Stevenson White**, manager, purchases and stores, of the New York Central System, died in a New York hospital on November 4. Mr. White, who was born at Morgantown, W. Va., on April 12, 1888, was educated at Culver Military Academy and West Virginia University, and entered railroad service in July, 1910, as a clerk in the car service department of the Pittsburgh & Lake Erie at Pittsburgh, Pa. He was named chief clerk to the passenger agent in 1915, shortly thereafter becoming assistant purchasing agent at Pittsburgh, and in 1916 he was advanced to purchasing agent. On March 1, 1920, he was promoted to purchasing agent of the New



**Charles S. White**

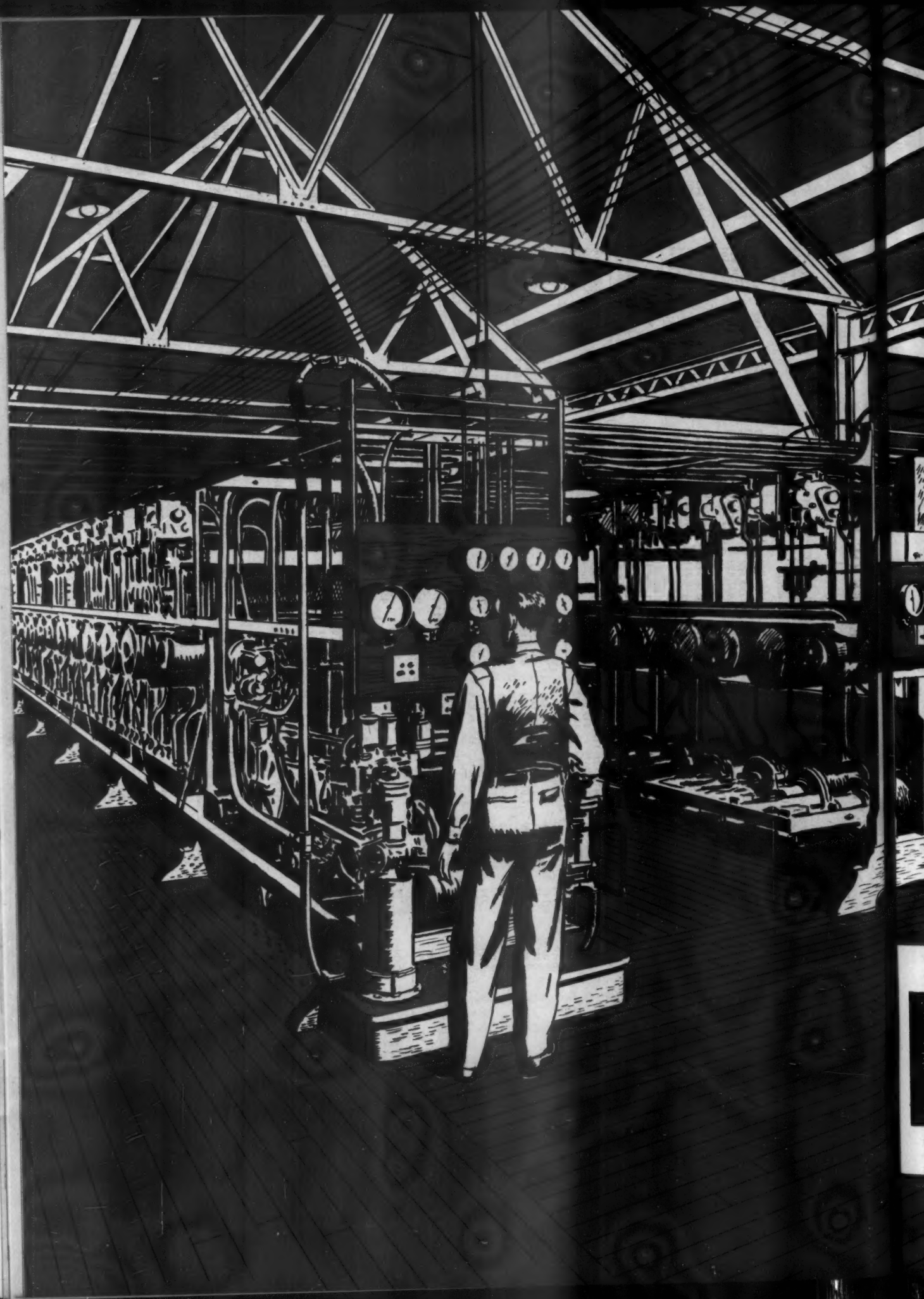
York Central with headquarters at New York, and he remained in that post until 1931, when he became general purchasing agent of the New York Central System. He was appointed manager, purchases and stores, on March 1, 1943, the position he held at the time of his death.



# REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1944

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation		Net railway operating income			
		Freight	Passenger (inc. misc.)	Total	Way and structures	Maintenance of equip-	Traffic		Trans- portation	Total	Operating income	1944	1943	
Akron, Canton & Youngstown	Sept. 9 mos.	\$373,197	\$157	\$388,798	\$93,295	\$36,764	\$130,059	\$107,677	\$275,540	70.9	\$113,258	\$66,903	\$47,155	\$83,775
Alton	Sept. 9 mos.	3,368,216	1,524	3,513,110	452,168	325,332	777,500	1,012,273	2,254,502	63.3	1,219,010	745,057	596,525	769,209
Alton	Sept. 9 mos.	2,153,192	757,447	3,240,240	498,172	452,168	950,340	973,597	2,131,430	63.8	1,108,810	589,163	357,140	199,373
Alton	Sept. 9 mos.	18,428,722	7,132,181	28,484,416	4,007,668	4,027,859	628,125	9,103,987	18,944,915	66.5	9,339,541	5,032,729	3,000,247	3,109,544
Atchison, Topeka & Santa Fe System	Sept. 9 mos.	33,010,607	9,256,992	45,187,642	5,547,742	6,868,714	583,074	11,388,074	24,994,108	55.3	20,193,534	6,446,545	5,796,882	3,974,679
Atlanta & West Point	Sept. 9 mos.	277,953,831	85,171,476	389,634,662	47,136,090	60,236,931	5,577,271	102,403,157	221,038,601	56.7	168,796,061	43,852,380	40,125,367	45,359,031
Atlanta, Birmingham & Coast	Sept. 9 mos.	2,473,831	1,433,088	4,284,245	448,997	509,528	88,298	1,441,333	2,661,047	62.1	1,623,198	550,044	300,748	370,818
Western of Alabama	Sept. 9 mos.	253,627	169,981	456,437	53,425	64,332	10,391	144,947	290,019	63.5	166,418	51,977	40,444	50,046
Atlanta, Birmingham & Coast	Sept. 9 mos.	507,331	54,057	596,121	109,419	101,679	29,624	225,873	493,671	82.81	102,450	51,167	26,662	33,561
Atlanta, Birmingham & Coast	Sept. 9 mos.	5,133,018	463,819	5,874,548	1,008,308	905,771	252,533	2,200,066	4,569,930	77.79	1,304,618	603,650	298,083	579,388
Atlantic Coast Line	Sept. 9 mos.	7,070,565	3,711,415	11,594,670	1,233,619	2,190,500	172,956	3,651,899	7,663,246	66.1	3,250,000	681,424	554,372	551,715
Charleston & Western Carolina	Sept. 9 mos.	75,842,999	34,419,822	117,407,258	11,003,042	18,153,698	1,631,826	34,254,988	68,637,838	58.5	48,769,420	14,019,420	10,944,730	12,848,823
Charleston & Western Carolina	Sept. 9 mos.	326,821	12,967	347,069	46,938	66,069	9,946	120,583	250,092	72.1	96,977	21,977	23,127	72,855
Charleston & Western Carolina	Sept. 9 mos.	3,309,173	109,938	3,494,642	478,483	530,959	90,957	1,072,622	2,233,745	63.9	1,260,897	605,897	595,201	608,232
Baltimore & Ohio	Sept. 9 mos.	26,238,379	5,006,968	33,021,413	4,924,999	6,492,859	530,059	10,837,034	23,851,693	72.2	9,169,720	4,205,725	3,227,411	4,669,131
Baltimore & Ohio	Sept. 9 mos.	238,230,186	38,434,305	291,988,563	42,383,816	58,406,917	4,472,480	96,225,786	211,169,017	72.3	80,319,546	41,464,664	34,410,122	51,537,688
Staten Island Rapid Transit	Sept. 9 mos.	343	326,821	12,967	12,967	347,069	9,946	1,072,622	250,092	72.1	96,977	21,977	23,127	72,855
Staten Island Rapid Transit	Sept. 9 mos.	24	302,591	1,058,360	4,077,114	625,415	130,317	1,150	1,059,118	56.1	1,790,356	1,104,427	918,255	908,158
Bangor & Aroostook	Sept. 9 mos.	583,960	92,307	734,821	130,317	121,879	6,050	177,745	470,011	64.0	264,810	96,086	120,005	59,336
Bangor & Aroostook	Sept. 9 mos.	5,961,006	708,223	7,034,161	1,178,028	1,074,568	55,226	1,804,987	4,115,132	62.7	2,823,019	844,798	1,046,381	1,089,968
Bessemer & Lake Erie	Sept. 9 mos.	1,844,928	1,944	1,850,697	141,555	75,044	12,948	1,804,987	4,411,142	62.7	2,936,155	1,084,381	1,089,968	1,089,968
Bessemer & Lake Erie	Sept. 9 mos.	15,265,541	16,696	15,409,815	1,325,522	6,576,506	123,912	3,088,792	11,531,046	74.8	3,878,769	1,651,791	3,991,408	1,713,698
Boston & Maine	Sept. 9 mos.	5,164,614	1,675,039	7,492,716	1,083,993	1,259,557	105,116	2,600,839	5,300,747	70.7	2,191,969	1,242,794	1,007,267	942,114
Boston & Maine	Sept. 9 mos.	43,254,325	14,759,631	65,827,747	10,330,377	17,077,060	708,079	23,909,888	48,187,956	73.2	17,637,830	10,201,876	7,719,907	9,637,407
Burlington, Rock Island	Sept. 9 mos.	212,556	65,284	292,841	30,557	29,928	3,210	108,950	187,956	63.5	106,846	95,928	53,403	49,758
Burlington, Rock Island	Sept. 9 mos.	1,507,020	568,759	2,209,338	256,991	227,884	28,495	73,322	1,383,793	62.6	825,545	738,701	446,457	467,997
Cambria & Indiana	Sept. 9 mos.	139,300	.....	139,362	16,346	50,212	521	16,936	91,106	65.37	48,256	56,236	36,825	86,825
Cambria & Indiana	Sept. 9 mos.	1,377,370	88,516	1,485,976	133,306	450,117	5,213	171,577	803,400	58.30	574,590	221,584	484,948	390,686
Canadian Pacific Lines in Maine	Sept. 9 mos.	366,080	724,865	4,999,116	102,890	47,113	6,725	149,651	2,359,526	68.2	1,734,590	132,108	7,973	241,827
Canadian Pacific Lines in Maine	Sept. 9 mos.	3,508,557	724,865	4,999,116	579,473	640,388	57,116	1,371,591	2,759,526	61.3	1,739,590	1,126,136	1,739,167	1,739,167
Canadian Pacific Lines in Vermont	Sept. 9 mos.	78,442	44,348	139,882	30,885	17,882	2,440	95,573	159,558	114.1	19,676	30,090	66,379	70,079
Canadian Pacific Lines in Vermont	Sept. 9 mos.	764,127	245,426	1,284,011	128,011	283,286	20,814	813,949	1,500,581	133.0	372,570	457,019	718,459	691,917
Central of Georgia	Sept. 9 mos.	2,075,343	732,288	3,053,660	458,911	323,811	72,260	1,156,752	2,363,680	77.4	689,980	469,706	418,683	553,623
Central of Georgia	Sept. 9 mos.	20,390,330	6,550,555	29,523,876	3,844,723	4,595,977	633,946	10,594,242	20,945,079	70.9	8,578,797	5,580,113	4,991,981	6,843,541
Central of New Jersey	Sept. 9 mos.	4,018,657	667,052	5,001,790	576,771	867,630	56,229	2,025,017	3,691,996	73.8	1,309,794	752,031	507,152	395,126
Central of New Jersey	Sept. 9 mos.	37,600,150	5,728,455	46,096,863	5,084,835	8,186,368	481,466	18,963,876	34,191,361	74.2	11,905,502	7,008,052	4,776,796	5,008,239
Central Vermont	Sept. 9 mos.	537,282	761,000	6,643,144	1,015,137	988,973	96,132	2,852,009	5,189,625	83.7	1,153,519	1,039,522	615,503	1,059,163
Chesapeake & Ohio	Sept. 9 mos.	15,238,303	2,114,704	18,064,066	2,319,645	3,497,437	213,925	4,818,423	11,371,355	63.0	6,692,711	2,459,551	2,913,600	3,214,342
Chesapeake & Ohio	Sept. 9 mos.	140,789,586	17,958,039	164,715,676	19,655,044	31,754,087	2,104,939	42,774,843	101,312,631	71.5	63,042,711	22,131,688	25,236,000	28,166,449
Chicago & Eastern Illinois	Sept. 9 mos.	2,179,827	657,736	2,672,967	383,878	461,855	65,060	975,482	1,990,521	74.5	789,208	289,446	93,835	229,272
Chicago & Eastern Illinois	Sept. 9 mos.	18,011,034	5,735,609	25,894,680	3,257,647	4,035,096	585,404	9,141,470	18,002,594	69.5	7,892,086	4,713,417	2,915,113	3,101,315
Chicago & Illinois Midland	Sept. 9 mos.	557,480	1,511	500,155	70,434	91,929	21,738	139,720	350,258	59.4	239,897	75,645	78,763	85,201
Chicago & Illinois Midland	Sept. 9 mos.	5,049,103	13,766	5,332,219	654,433	793,869	198,553	1,285,919	3,176,320	59.6	2,155,899	713,865	743,838	743,838
Chicago & North Western	Sept. 9 mos.	9,968,446	3,148,210	14,226,161	1,816,514	2,576,103	219,310	4,747,462	9,839,830	67.7	4,686,331	2,147,910	2,003,894	3,560,931
Chicago & North Western	Sept. 9 mos.	84,491,467	28,183,000	124,601,250	16,524,190	22,490,070	2,217,977	41,567,620	87,257,002	70.0	37,344,248	17,887,468	17,750,809	27,697,308
Chicago, Burlington & Quincy	Sept. 9 mos.	15,569,661	3,345,420	20,609,940	4,308,868	2,721,303	291,330	5,511,379	12,222,498	62.7	7,687,642	3,309,051	1,952,627	1,098,872
Chicago, Burlington & Quincy	Sept. 9 mos.	132,253,491	30,290,150	177,346,463	30,682,598	24,677,192	2,566,502	45,312,566	108,489,484	61.2	68,856,979	24,103,593	20,324,145	32,471,092
Chicago Great Western	Sept. 9 mos.	1,908,019	271,341	2,274,815	398,273	315,070	62,631	893,759	1,739,435	73.2	635,385	451,180	324,104	377,855
Chicago Great Western	Sept. 9 mos.	18,779,958	2,206,489	22,696,225	3,383,415	2,900,554	580,425	8,300,749	15,834,387	69.8	6,861,838	4,012,714	2,377,065	2,814,013
Chicago, Indianapolis & Louisville	Sept. 9 mos.	926,436	115,837	1,116,866	143,960	184,516	32,468	372,156	812,403	72.7	304,463	183,238	141,856	266,854
Chicago, Indianapolis & Louisville	Sept. 9 mos.	8,591,185	997,621	10,310,037	1,161,987	1,701,672	290,188	3,253,490	6,929,640	67.2	3,380,463	2,351,559	1,983,965	2,506,467





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## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1944—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation		Operating income	Net railway operating income	
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equipment	Traffic					1944	1943
Chicago, Milwaukee, St. Paul & Pacific .....	Sept. 9 mos.	10,728	127,441,634	25,498,590	168,695,372	28,715,645	25,865,778	2,688,365	55,400,172	118,799,995	70.4	49,895,377	23,961,683
Chicago, Rock Island & Pacific .....	Sept. 9 mos.	7,751	10,992,315	4,043,274	16,152,490	2,297,119	2,276,377	346,573	4,423,215	9,925,384	61.4	6,227,106	1,766,908
Chicago, St. Paul, Minneapolis & Omaha .....	Sept. 9 mos.	7,751	98,060,775	33,572,761	142,298,904	17,697,710	19,529,686	3,054,995	40,306,005	86,037,824	60.5	56,261,080	22,672,603
Cincinnati .....	Sept. 9 mos.	1,617	1,807,165	378,064	2,367,685	339,029	324,591	41,570	934,452	1,721,319	72.4	655,366	344,913
Cleveland .....	Sept. 9 mos.	1,617	15,241,257	3,323,826	20,346,730	2,897,919	3,025,207	361,700	8,511,933	15,676,203	77.0	4,670,527	3,040,563
Colorado & Southern .....	Sept. 9 mos.	302	1,123,596	100,844	1,244,440	90,312	189,697	21,760	2,309,825	560,915	49.2	5,676,784	4,440,927
Fort Worth & Denver City .....	Sept. 9 mos.	804	1,052,787	100,844	1,244,440	767,750	1,697,827	202,918	2,206,245	5,063,197	47.1	4,510,278	4,510,278
Colorado & Western .....	Sept. 9 mos.	748	1,052,787	100,844	1,244,440	767,750	1,697,827	202,918	2,206,245	5,063,197	47.1	4,510,278	4,510,278
Fort Worth & Denver City .....	Sept. 9 mos.	804	1,052,787	100,844	1,244,440	767,750	1,697,827	202,918	2,206,245	5,063,197	47.1	4,510,278	4,510,278
Colorado & Wyoming .....	Sept. 9 mos.	42	85,565	138,147	193,712	14,412	19,543	686	53,113	92,240	66.7	45,907	32,315
Columbus & Greenville .....	Sept. 9 mos.	42	785,090	1,260,281	10,312	131,109	31,875	6,111	49,901	122,743	65.4	435,857	300,361
Delaware & Hudson .....	Sept. 9 mos.	168	1,026,619	107,197	1,216,434	256,807	167,654	40,612	412,753	1,002,077	82.4	214,377	63,881
Delaware, Lackawanna & Western .....	Sept. 9 mos.	846	3,856,219	269,082	4,221,163	561,292	1,053,953	47,244	1,380,264	3,155,864	74.6	1,075,299	857,642
Denver & Rio Grande Western .....	Sept. 9 mos.	847	35,421,212	1,877,912	38,221,228	4,486,063	9,402,737	428,317	12,860,210	28,222,225	73.8	9,999,003	6,683,120
Denver & Salt Lake .....	Sept. 9 mos.	973	4,867,224	969,470	6,448,163	791,575	992,314	112,612	2,621,355	4,626,805	72.8	1,751,358	4,151,324
Denver & Western .....	Sept. 9 mos.	973	45,208,081	8,342,859	59,160,569	6,559,158	9,430,617	1,033,469	24,076,034	42,749,221	72.3	16,411,348	4,683,316
Detroit & Mackinac .....	Sept. 9 mos.	2,388	5,149,760	839,412	6,271,124	668,451	1,170,675	100,227	1,817,422	3,957,642	63.1	2,313,482	1,496,002
Detroit & Toledo Shore Line .....	Sept. 9 mos.	2,393	41,960,960	7,424,747	51,639,857	6,555,961	10,390,760	908,753	15,502,171	35,128,419	68.0	16,511,438	11,259,922
Detroit, Toledo & Ironton .....	Sept. 9 mos.	232	2,359,680	86,693	2,538,137	554,361	510,870	26,012	843,697	2,039,685	80.4	498,452	226,099
Duluth, Missabe & Iron Range .....	Sept. 9 mos.	230	562,798	12,947	88,656	16,507	889	7,364	31,345	70,357	79.4	18,299	13,800
Duluth, Missabe & Iron Range .....	Sept. 9 mos.	50	3,254,353	3,266,669	317,703	230,694	87,786	8,786	921,690	1,635,980	50.1	1,635,980	999,490
Duluth, Toledo & Ironton .....	Sept. 9 mos.	464	665,909	1,505	702,152	91,337	146,818	15,687	200,855	478,697	68.2	233,455	146,262
Duluth, Missabe & Iron Range .....	Sept. 9 mos.	547	4,727,008	13,341	6,799,282	820,783	1,191,314	137,147	1,766,039	4,142,371	61.0	2,466,909	1,514,647
Duluth, Missabe & Iron Range .....	Sept. 9 mos.	545	28,336,587	53,639	32,897,919	3,549,341	4,875,591	38,641	6,305,715	15,245,764	46.3	17,652,155	9,374,422
Duluth, Winnipeg & Pacific .....	Sept. 9 mos.	175	186,000	5,000	196,900	58,631	29,233	2,628	80,571	175,098	88.9	21,802	5,366
Elgin, Joliet & Eastern .....	Sept. 9 mos.	175	2,396,000	37,600	2,476,900	464,694	288,816	19,385	959,009	1,768,359	71.4	708,541	524,917
Erie .....	Sept. 9 mos.	392	2,396,000	37,600	2,476,900	464,694	288,816	19,385	959,009	1,768,359	71.4	708,541	524,917
Florida East Coast .....	Sept. 9 mos.	682	990,645	861,522	2,033,631	345,862	310,084	49,802	6,821,858	14,088,845	70.2	3,899,620	2,100,450
Georgia Railroad .....	Sept. 9 mos.	329	609,651	155,518	808,826	113,502	119,653	22,558	323,989	601,727	74.4	207,099	174,941
Georgia & Florida .....	Sept. 9 mos.	408	1,659,000	7,541	1,778,176	47,351	25,236	10,364	2,790,688	5,154,249	66.4	2,310,474	2,310,474
Grand Trunk Western .....	Sept. 9 mos.	1,026	21,392,000	415,000	22,457,000	549,117	486,940	45,650	11,118,547	2,307,626	84.1	437,374	281,608
Canadian National Lines in New England .....	Sept. 9 mos.	172	119,000	12,900	150,100	47,886	20,443	2,551	10,324,257	20,652,697	78.1	5,803,303	3,999,469
Great Northern .....	Sept. 9 mos.	8,371	16,659,131	1,628,679	19,778,866	2,706,824	3,055,764	272,739	4,896,072	10,917,296	55.2	8,861,570	4,347,495
Green Bay & Western .....	Sept. 9 mos.	234	2,074,661	5,979	2,139,477	650,422	217,317	74,605	617,116	1,626,385	76.0	513,092	184,449
Gulf & Ship Island .....	Sept. 9 mos.	259	207,593	47,461	285,749	53,211	23,642	2,378	97,077	186,054	65.1	99,695	80,776
		259	1,549,633	434,565	2,214,882	421,458	214,539	23,174	814,780	1,560,741	70.6	651,141	450,867



Cont. & Ship Landing 9 mos. 259 1,549,633 434,565 2,211,682 23,174 814,780 1,560,741 70.6 651,141 450,867 319,079 —164,947

# REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1944—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	
		Freight	Passenger	Total (inc. misc.)	Way and structures	Equipment	Traffic		Operating income	Net railway operating income
Gulf, Mobile & Northern	Sept. 1,952	\$2,662,113	\$239,380	\$2,901,493	\$605,695	\$476,887	\$82,565	70.6	\$879,574	\$343,726
Illinois Central	9 mos. 1,967	21,138,498	2,144,533	23,283,031	4,818,211	4,772,343	727,431	67.7	9,107,059	3,505,805
Illinois Central	Sept. 4,823	13,797,174	3,101,372	16,898,546	3,090,206	3,345,053	213,720	67.8	5,837,265	1,822,758
Illinois Central	9 mos. 4,823	127,923,466	28,989,174	156,912,640	24,315,843	29,394,971	1,731,529	64.5	59,432,918	19,143,314
Yazoo & Mississippi Valley	Sept. 1,524	3,505,358	427,311	3,932,669	546,023	328,965	34,342	72.8	1,213,427	606,561
Illinois Central System	9 mos. 1,524	21,805,460	3,833,846	25,639,306	4,283,105	4,015,764	276,547	62.1	10,237,052	3,765,024
Illinois Central System	Sept. 6,347	17,302,532	3,528,683	20,831,215	3,636,231	3,674,013	248,062	64.2	7,968,669	2,155,749
Illinois Central System	9 mos. 6,347	149,720,206	32,823,020	182,543,226	28,598,948	32,410,737	2,008,076	64.1	69,689,970	22,955,555
Illinois Terminal	Sept. 476	702,204	180,553	882,757	108,124	96,030	19,606	54.07	447,290	122,922
Kansas City Southern	Sept. 878	6,340,947	1,632,923	7,973,870	932,297	833,149	177,934	54.55	3,957,408	1,045,207
Kansas City Southern	9 mos. 878	53,088,943	3,767,826	56,856,769	4,837,716	4,973,853	59,592	57.5	1,562,223	894,223
Kansas City Southern	9 mos. 878	27,537,517	3,829,713	31,367,230	4,477,054	4,452,712	550,593	58.8	13,683,467	6,676,467
Kansas, Oklahoma & Gulf	Sept. 328	371,701	1,686	373,387	55,742	22,334	9,534	46.6	200,903	112,589
Lake Superior & Ishpeming	Sept. 328	3,663,178	15,222	3,678,400	397,134	194,550	85,365	46.8	1,653,623	927,574
Lake Superior & Ishpeming	9 mos. 156	31,315,385	1,168	31,316,553	3,987,077	27,674	37,630	37.3	2,949,666	180,603
Lake Superior & Ishpeming	9 mos. 156	1,951,739	1,301	2,953,040	298,956	311,762	5,703	49.2	1,267,610	553,109
Lehigh & Hudson River	Sept. 96	225,003	114	225,117	53,090	35,813	5,075	74.5	57,638	34,455
Lehigh & Hudson River	9 mos. 96	2,446,014	1,760	2,447,774	443,133	324,842	46,866	65.0	838,096	385,774
Lehigh & Hudson River	9 mos. 190	530,407	.....	530,407	43,211	12,472	7,697	63.1	196,932	107,007
Lehigh & Hudson River	9 mos. 190	4,781,346	.....	4,781,346	4,806,753	4,848,894	1,394,120	65.2	1,675,349	925,876
Lehigh Valley	Sept. 1,260	6,658,047	724,796	7,382,843	1,366,920	1,375,492	118,299	75.8	1,896,721	1,763,225
Louisiana & Arkansas	9 mos. 1,260	64,669,202	6,462,698	71,131,900	10,960,329	12,122,988	1,080,662	71.8	21,172,123	13,411,451
Louisiana & Arkansas	Sept. 834	1,569,103	186,737	1,755,840	339,753	210,008	31,509	57.2	778,989	371,154
Louisiana & Arkansas	9 mos. 834	13,260,913	1,488,840	14,749,753	3,188,986	1,705,869	305,418	59.4	6,216,400	2,418,714
Louisville & Nashville	Sept. 4,744	12,419,185	3,983,845	16,403,030	2,890,404	2,890,404	231,897	62.2	5,521,408	1,676,261
Maine Central	9 mos. 4,744	116,238,214	34,942,963	151,181,177	17,329,659	26,343,653	1,875,324	61.3	6,521,192	15,943,732
Maine Central	Sept. 988	1,299,800	336,604	1,636,404	450,521	298,892	119,286	80.0	350,635	138,610
Maine Central	9 mos. 988	10,771,484	2,996,669	13,768,153	2,800,116	2,543,650	115,946	73.9	3,916,622	1,676,356
Midland Valley	Sept. 334	149,294	47	149,341	30,433	14,292	2,331	68.1	45,591	32,850
Minneapolis & St. Louis	9 mos. 334	1,188,997	1,257	1,190,254	265,700	112,152	21,595	68.3	399,419	277,977
Minneapolis & St. Louis	Sept. 1,408	10,601,134	40,635	10,641,769	1,275,964	1,275,964	63,140	72.5	350,835	144,155
Minneapolis & St. Louis	9 mos. 1,408	10,601,134	359,491	10,960,625	2,106,318	1,552,748	582,478	72.7	3,110,288	1,427,237
Minneapolis, St. Paul & Sault Ste. Marie	Sept. 4,277	4,170,557	263,136	4,433,693	638,063	757,926	71,504	68.4	1,498,467	890,139
Duluth, South Shore & Atlantic	9 mos. 4,277	34,907,622	2,319,141	37,226,763	6,206,527	6,425,593	661,117	72.0	11,167,126	7,784,373
Duluth, South Shore & Atlantic	Sept. 551	326,622	28,908	358,530	388,015	80,432	79,680	77.5	194,374	73,475
Duluth, South Shore & Atlantic	9 mos. 551	2,748,781	272,543	3,021,324	642,455	515,700	1,198,511	77.5	728,573	562,613
Spokane International	Sept. 152	149,121	5,233	154,354	45,653	14,911	3,426	68.4	51,246	30,087
Mississippi Central	9 mos. 152	1,008,310	78,911	1,087,221	413,327	129,798	31,152	68.1	497,703	283,323
Mississippi Central	Sept. 158	166,517	3,516	170,033	28,861	18,212	43,592	60.9	68,160	42,739
Mississippi Central	9 mos. 158	1,565,415	53,603	1,619,018	277,719	161,446	80,453	61.8	629,148	401,751
Missouri & Arkansas	Sept. 365	220,188	3,689	223,877	62,877	26,957	8,282	76.4	54,760	36,365
Missouri-Illinois	9 mos. 365	1,772,296	3,534	1,775,830	428,344	213,641	67,154	72.7	511,246	337,951
Missouri-Illinois	Sept. 172	368,244	22	368,266	46,954	43,957	6,730	54.8	163,426	87,151
Missouri-Illinois	9 mos. 172	2,504,857	10,568	2,515,425	384,824	371,221	33,904	59.6	1,024,853	452,634
Missouri-Kansas-Texas Lines	Sept. 3,253	54,980,736	1,187,767	56,168,503	844,406	479,577	132,509	66.9	2,378,726	734,263
Missouri Pacific	9 mos. 3,253	47,256,037	10,407,587	57,663,624	7,594,635	42,466,356	1,194,289	68.4	19,640,080	8,646,682
Missouri Pacific	Sept. 7,097	14,615,361	3,805,005	18,420,366	2,318,439	11,709,757	303,232	55.9	8,708,932	3,092,276
Missouri Pacific	9 mos. 7,097	130,485,379	32,554,378	163,039,757	24,006,116	100,351,740	2,749,009	57.3	74,723,301	25,606,119
Gulf Coast Lines	Sept. 1,734	2,784,871	354,980	3,139,851	672,935	2,087,985	880,218	63.7	1,192,236	559,541
International Great Northern	9 mos. 1,734	31,638,505	3,190,162	34,828,667	5,547,808	18,511,546	8,433,706	72.7	17,433,355	7,337,899
International Great Northern	Sept. 1,110	1,695,456	469,545	2,165,001	307,376	1,788,201	790,329	71.2	688,144	394,593
International Great Northern	9 mos. 1,110	15,949,088	4,803,291	20,752,379	3,862,390	16,015,577	7,362,749	70.4	6,926,876	4,089,160
Monongahela	Sept. 170	495,950	2,744	500,694	93,065	45,384	692	55.0	226,706	125,654
Monongahela	9 mos. 170	4,982,467	19,831	5,002,298	675,526	430,437	6,398	48.4	2,607,401	1,690,457



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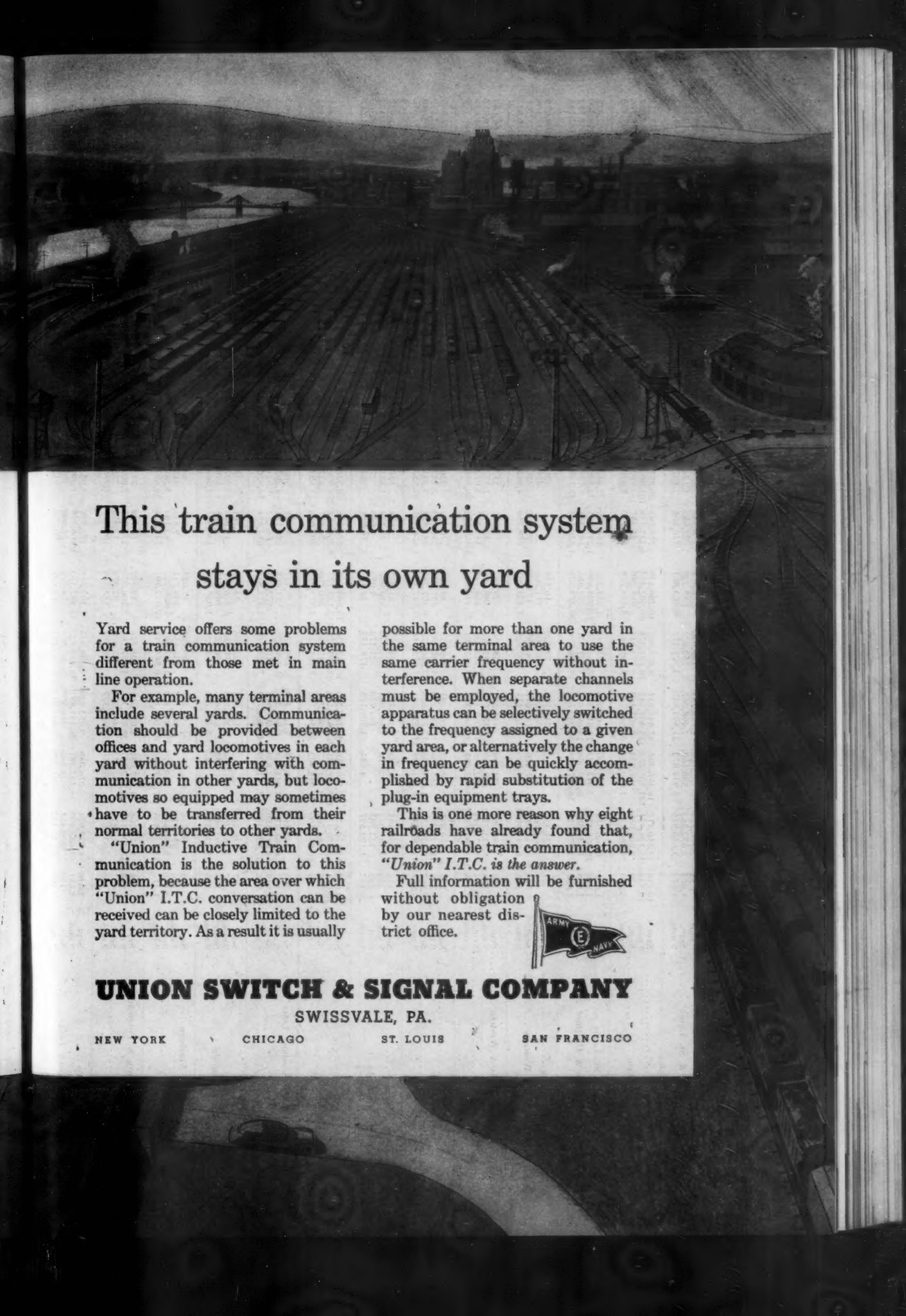


***Dependable voice communication***

"Union" I.T.C. (Inductive Train Communication) system provides dependable, practicable two-way voice communication between vehicles of a train, between trains, and between trains and wayside points.

*It is the only train communication system designed exclusively for railroad use, by men who know railroad needs, and proved through years of regular railroad service.*





## This train communication system stays in its own yard

Yard service offers some problems for a train communication system different from those met in main line operation.

For example, many terminal areas include several yards. Communication should be provided between offices and yard locomotives in each yard without interfering with communication in other yards, but locomotives so equipped may sometimes have to be transferred from their normal territories to other yards.

"Union" Inductive Train Communication is the solution to this problem, because the area over which "Union" I.T.C. conversation can be received can be closely limited to the yard territory. As a result it is usually

possible for more than one yard in the same terminal area to use the same carrier frequency without interference. When separate channels must be employed, the locomotive apparatus can be selectively switched to the frequency assigned to a given yard area, or alternatively the change in frequency can be quickly accomplished by rapid substitution of the plug-in equipment trays.

This is one more reason why eight railroads have already found that, for dependable train communication, "Union" I.T.C. is the answer.

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NEW YORK

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## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1944—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation		Net railway operating income
		Freight	Passenger	Total (inc. misc.)	Maintenance of Way and structures	Equipment	Traffic		Operating income	1944	1943
Montour .....	Sept. 51	\$250,951	.....	\$252,413	\$17,568	\$61,479	\$1,033	63.1	\$31,150	\$32,695	\$67,100
Nashville, Chattanooga & St. Louis .....	9 mos. 1,072	2,276,842	.....	2,276,842	1,471,046	596,346	1,471,046	64.6	809,970	809,970	609,258
.....	Sept. 1,072	2,276,842	580,163	3,498,267	562,824	688,233	81,662	73.1	939,901	189,200	199,800
.....	9 mos. 1,072	23,650,945	5,947,872	31,893,847	5,521,178	6,463,861	730,504	73.9	8,317,922	3,096,856	3,644,072
New York Central .....	Sept. 10,746	39,550,412	16,576,295	61,645,051	8,894,601	10,296,139	718,946	69.8	18,631,511	6,911,897	5,455,952
.....	9 mos. 10,746	355,128,317	141,701,273	545,409,441	76,191,378	96,007,730	6,331,148	71.5	155,678,970	65,905,777	51,582,936
Pittsburgh & Lake Erie .....	Sept. 229	2,707,088	108,239	2,907,109	381,812	918,280	41,317	83.9	469,186	115,617	431,112
.....	9 mos. 2,249	27,095,855	1,010,072	26,532,744	3,001,743	8,424,728	390,437	80.1	5,281,373	616,505	4,247,783
New York, Chicago & St. Louis .....	Sept. 1,688	6,966,379	473,920	7,604,296	993,748	1,232,257	144,179	65.8	2,597,146	1,226,467	824,558
.....	9 mos. 1,688	70,808,153	3,613,122	75,813,265	7,951,558	10,929,238	1,247,401	59.6	30,395,253	12,760,415	8,375,403
New York, New Haven & Hartford .....	Sept. 1,838	7,131,686	6,383,606	13,515,292	2,021,531	2,224,086	217,562	69.4	4,166,623	2,568,035	1,402,151
.....	9 mos. 1,838	71,078,215	56,387,405	137,932,762	18,006,094	20,379,554	1,330,164	68.1	43,945,623	26,987,966	17,141,059
New York Connecting .....	Sept. 21	221,436	.....	241,505	79,920	10,399	50,352	59.0	99,099	74,809	116,988
.....	9 mos. 21	2,062,169	.....	2,269,006	609,700	111,763	478,284	53.6	1,051,899	1,37,033	1,291,088
New York, Ontario & Western .....	Sept. 546	6,553,301	37,470	7,452,41	96,830	159,278	25,002	99.6	2,806	55,833	133,336
.....	9 mos. 546	62,425,301	439,729	7,218,471	833,620	1,423,461	208,256	93.5	467,782	62,516	501,056
New York, Susquehanna & Western .....	Sept. 120	366,087	34,799	433,274	38,530	29,487	5,192	55.9	190,949	119,142	81,289
.....	9 mos. 120	3,935,315	319,180	4,379,694	341,937	388,975	42,816	59.4	1,909,122	1,452,304	705,484
Norfolk & Western .....	Sept. 2,154	11,277,344	1,392,098	13,059,310	1,447,358	2,466,975	182,722	56.4	5,543,602	1,390,141	1,831,621
.....	9 mos. 2,154	103,984,751	13,095,097	120,688,568	15,011,701	23,446,537	1,468,672	56.0	53,044,986	13,346,703	19,382,678
Norfolk Southern .....	Sept. 727	660,847	23,977	708,601	159,555	84,961	30,483	75.3	175,175	103,654	74,925
.....	9 mos. 727	5,822,230	265,588	6,283,255	1,487,985	737,884	256,833	77.5	1,413,161	841,185	574,332
Northern Pacific .....	Sept. 6,867	10,837,258	1,814,736	13,131,656	2,080,372	2,407,287	181,535	65.9	4,684,065	2,217,824	2,293,716
.....	9 mos. 6,867	89,287,848	16,751,095	115,598,261	15,985,758	21,937,892	1,638,305	67.7	37,319,172	13,757,978	16,690,862
Northwestern Pacific .....	Sept. 331	530,495	20,785	577,523	154,122	61,325	2,808	69.7	175,116	150,126	121,348
.....	9 mos. 331	4,180,032	183,876	4,562,044	1,516,340	559,936	23,769	80.8	877,740	638,464	424,191
Oklahoma City-Ada-Atoka .....	Sept. 132	131,787	.....	134,750	21,173	4,053	1,066	43.3	76,115	44,862	29,639
.....	9 mos. 132	1,193,597	4,681	1,209,178	178,355	42,487	10,848	44.3	673,949	369,809	263,991
Pennsylvania .....	Sept. 10,090	55,872,672	22,180,256	84,760,260	10,412,630	15,864,792	976,001	71.3	24,293,942	9,355,039	8,436,496
.....	9 mos. 10,090	512,070,325	195,339,031	762,946,158	88,705,771	143,133,175	9,264,612	72.8	207,738,198	95,886,442	86,430,604
Long Island .....	Sept. 376	1,283,706	2,491,873	3,964,252	615,932	560,100	22,841	72.9	1,074,751	533,276	334,133
.....	9 mos. 376	10,894,100	22,058,902	34,564,760	5,164,221	4,979,910	201,026	73.9	9,025,113	4,689,600	2,498,734
Pennsylvania-Reading Seashore Lines .....	Sept. 392	538,113	550,785	1,131,508	189,970	121,322	8,901	75.0	282,492	153,356	19,629
.....	9 mos. 392	4,668,316	4,944,604	9,941,298	1,439,532	1,111,668	80,181	70.8	2,900,881	1,839,105	705,970
Pere Marquette .....	Sept. 1,966	37,820,378	3,141,429	43,006,740	7,424,448	9,109,998	4,532	74.9	399,513	483,895	399,430
.....	9 mos. 1,966	378,200,002	3,141,429	43,006,740	7,424,448	9,109,998	4,532	74.9	10,800,513	4,561,121	3,836,981
Pittsburgh & Shawmut .....	Sept. 97	128,536	.....	129,295	32,706	24,440	1,761	76.3	30,680	25,205	23,462
.....	9 mos. 97	1,164,269	.....	1,170,156	287,988	226,427	17,003	77.7	261,499	205,686	189,954
Pittsburgh & West Virginia .....	Sept. 136	597,002	53	614,436	106,327	109,343	21,648	68.6	192,935	206,416	221,976
.....	9 mos. 136	5,320,358	143	5,482,744	963,996	1,030,244	190,085	69.3	1,681,147	1,102,709	1,308,102
Pittsburgh, Shawmut & Northern .....	Sept. 190	95,718	.....	97,207	29,769	15,085	1,034	98.9	1,028	5,639	10,320
.....	9 mos. 190	931,793	.....	961,186	256,151	189,711	9,823	94.9	47,439	1,009	82,621
Reading .....	Sept. 1,410	8,080,894	849,770	9,343,133	1,889,722	1,889,722	82,104	72.7	2,543,175	993,635	1,019,569
.....	9 mos. 1,412	75,522,135	7,747,442	87,165,102	10,864,548	17,032,791	747,934	69.0	26,990,223	11,747,319	10,710,440
Richmond, Fredericksburg & Potomac .....	Sept. 118	1,373,208	1,387,031	3,011,365	205,776	345,559	15,728	47.2	1,589,405	377,967	261,506
.....	9 mos. 118	13,707,175	12,572,767	28,283,314	3,066,073	3,306,073	135,085	46.6	15,274,637	3,934,101	2,488,638
Rutland .....	Sept. 407	316,817	82,652	469,524	61,620	82,374	12,515	84.9	71,040	45,567	68,934
.....	9 mos. 408	2,632,630	565,350	3,789,527	558,869	783,549	109,042	92.9	269,090	41,391	44,150
St. Louis-San Francisco .....	Sept. 4,646	6,872,924	2,076,040	9,652,029	1,198,835	1,793,758	172,828	68.1	3,079,262	1,577,531	1,619,163
.....	9 mos. 4,646	61,882,409	18,432,381	86,161,891	11,478,522	15,887,154	1,506,779	68.9	26,778,017	12,535,771	17,385,929
St. Louis, San Francisco & Texas .....	Sept. 159	226,411	38,766	266,908	47,974	36,527	11,099	78.1	208,351	151,165	113,955
.....	9 mos. 159	2,712,142	251,589	3,033,014	341,727	276,607	99,259	56.0	1,334,822	554,598	326,833

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1944—CONTINUED

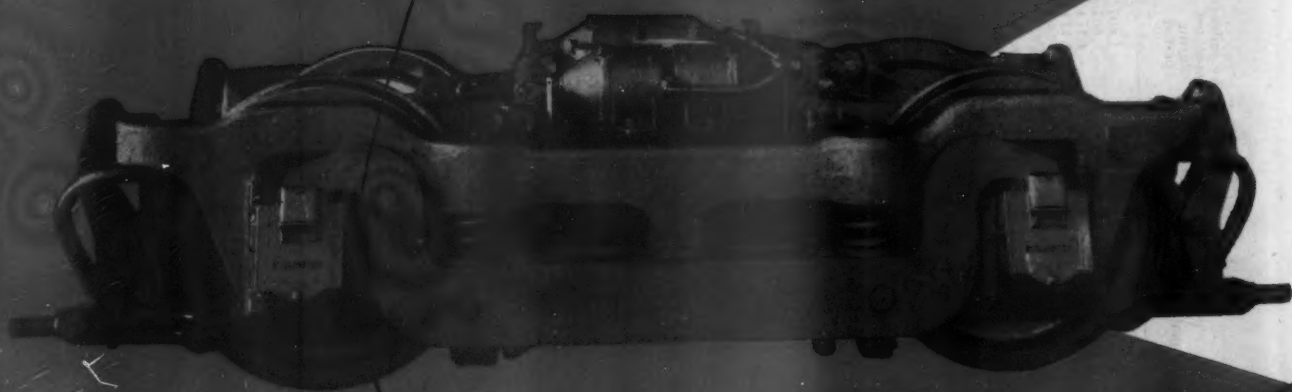
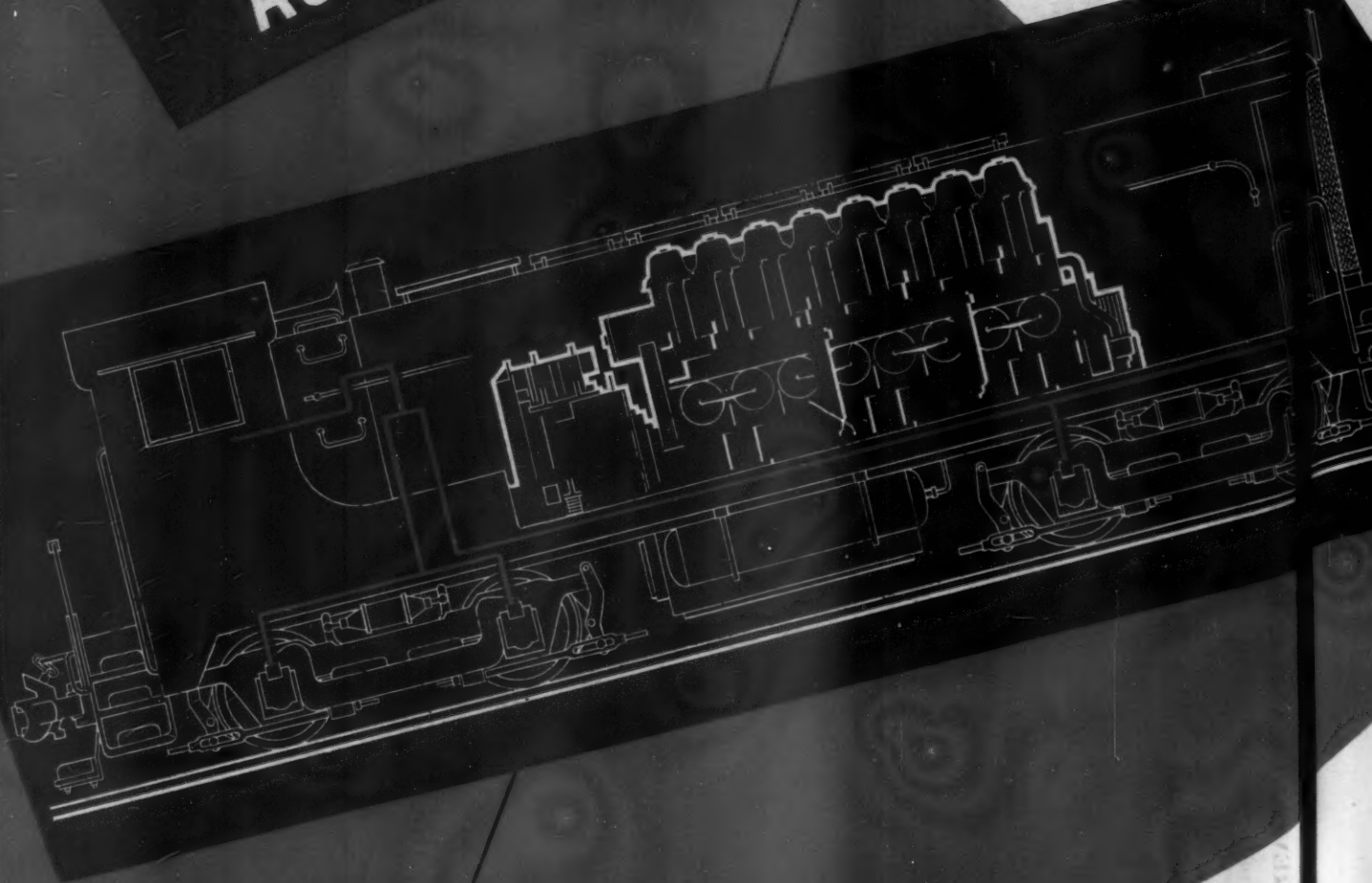


# REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1944—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from operation	Net railway operating income	
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equip-ment	Traffic			1944	1943
St. Louis Southwestern Lines.....	1,607	\$6,064,744	\$478,332	\$6,543,076	\$605,740	\$605,740	\$112,705	41.8	\$3,899,821	\$1,369,261	\$1,089,780
9 mos.....	1,607	\$6,021,950	\$3,170,408	\$9,192,358	\$5,739,660	\$5,739,660	\$106,350	46.8	\$2,891,058	\$1,409,677	\$1,007,624
Sept.....	4,174	\$7,890,070	\$3,440,626	\$11,330,696	\$1,462,501	\$1,462,501	\$242,597	63.2	\$4,144,907	\$2,144,907	\$1,826,448
Seaboard Air Line.....	4,175	\$7,215,523	\$3,209,129	\$10,424,652	\$1,300,706	\$1,300,706	\$210,915	61.8	\$4,059,515	\$2,039,515	\$1,698,178
9 mos.....	4,175	\$7,215,523	\$3,209,129	\$10,424,652	\$1,300,706	\$1,300,706	\$210,915	61.8	\$4,059,515	\$2,039,515	\$1,698,178
Southern Railway.....	6,505	\$16,260,295	\$4,845,680	\$21,105,975	\$3,488,913	\$3,488,913	\$272,335	63.5	\$8,144,503	\$2,890,378	\$2,552,095
9 mos.....	6,510	\$16,260,295	\$4,845,680	\$21,105,975	\$3,488,913	\$3,488,913	\$272,335	63.5	\$8,144,503	\$2,890,378	\$2,552,095
Sept.....	315	\$1,442,520	\$44,743,954	\$46,186,474	\$1,154,489	\$1,154,489	\$126,611	59.8	\$7,893,914	\$2,737,144	\$2,718,355
Alabama Great Southern.....	315	\$1,442,520	\$44,743,954	\$46,186,474	\$1,154,489	\$1,154,489	\$126,611	62.9	\$7,893,914	\$2,737,144	\$2,718,355
9 mos.....	315	\$1,442,520	\$44,743,954	\$46,186,474	\$1,154,489	\$1,154,489	\$126,611	59.8	\$7,893,914	\$2,737,144	\$2,718,355
Cincinnati, New Orleans & Texas Pacific.....	327	\$2,123,534	\$47,502	\$2,171,036	\$300,948	\$300,948	\$40,194	63.1	\$1,111,671	\$345,076	\$376,064
9 mos.....	327	\$2,123,534	\$47,502	\$2,171,036	\$300,948	\$300,948	\$40,194	63.1	\$1,111,671	\$345,076	\$376,064
Sept.....	397	\$2,243,007	\$87,111	\$2,330,118	\$278,862	\$278,862	\$32,111	58.0	\$1,138,070	\$348,917	\$373,910
Georgia Southern & Florida.....	397	\$2,243,007	\$87,111	\$2,330,118	\$278,862	\$278,862	\$32,111	63.4	\$1,226,003	\$51,298	\$50,790
9 mos.....	397	\$2,243,007	\$87,111	\$2,330,118	\$278,862	\$278,862	\$32,111	63.4	\$1,226,003	\$51,298	\$50,790
New Orleans & Northeastern.....	204	\$769,319	\$256,446	\$1,025,765	\$133,686	\$133,686	\$11,863	57.4	\$459,542	\$176,391	\$104,279
9 mos.....	204	\$769,319	\$256,446	\$1,025,765	\$133,686	\$133,686	\$11,863	57.4	\$459,542	\$176,391	\$104,279
Sept.....	2,262	\$2,913,032	\$8,227,705	\$11,140,737	\$1,094,683	\$1,094,683	\$103,226	56.7	\$4,206,908	\$1,603,466	\$883,965
Southern Pacific.....	2,262	\$2,913,032	\$8,227,705	\$11,140,737	\$1,094,683	\$1,094,683	\$103,226	67.9	\$13,390,362	\$6,680,353	\$4,918,878
9 mos.....	2,262	\$2,913,032	\$8,227,705	\$11,140,737	\$1,094,683	\$1,094,683	\$103,226	68.4	\$11,771,918	\$4,033,214	\$3,078,591
Texas & New Orleans.....	4,335	\$7,919,933	\$2,182,449	\$10,102,382	\$1,429,682	\$1,429,682	\$156,076	58.4	\$4,453,137	\$1,157,771	\$728,310
9 mos.....	4,335	\$7,919,933	\$2,182,449	\$10,102,382	\$1,429,682	\$1,429,682	\$156,076	58.4	\$4,453,137	\$1,157,771	\$728,310
Sept.....	4,339	\$7,920,157	\$2,182,449	\$10,102,606	\$1,429,682	\$1,429,682	\$156,076	55.6	\$4,453,137	\$1,157,771	\$728,310
Spokane, Portland & Seattle.....	944	\$2,251,981	\$1,771,667	\$4,023,648	\$230,284	\$230,284	\$14,245	59.9	\$1,015,348	\$488,544	\$433,761
9 mos.....	944	\$2,251,981	\$1,771,667	\$4,023,648	\$230,284	\$230,284	\$14,245	67.3	\$6,300,441	\$4,678,832	\$2,999,687
Tennessee Central.....	286	\$331,000	\$42,922	\$373,922	\$64,900	\$64,900	\$7,075	75.5	\$96,073	\$64,110	\$50,242
9 mos.....	286	\$331,000	\$42,922	\$373,922	\$64,900	\$64,900	\$7,075	75.5	\$96,073	\$64,110	\$50,242
Sept.....	1,884	\$4,008,280	\$1,830,001	\$5,838,281	\$883,999	\$883,999	\$112,285	56.7	\$2,337,172	\$779,096	\$533,429
Texas & Pacific.....	1,884	\$4,008,280	\$1,830,001	\$5,838,281	\$883,999	\$883,999	\$112,285	57.1	\$25,748,193	\$6,772,297	\$5,015,843
9 mos.....	1,884	\$4,008,280	\$1,830,001	\$5,838,281	\$883,999	\$883,999	\$112,285	57.1	\$25,748,193	\$6,772,297	\$5,015,843
Texas Mexican.....	162	\$156,432	\$1,116	\$157,548	\$115,409	\$115,409	\$4,193	103.4	\$—	\$35,596	\$48,714
9 mos.....	162	\$156,432	\$1,116	\$157,548	\$115,409	\$115,409	\$4,193	103.4	\$—	\$35,596	\$48,714
Sept.....	163	\$156,432	\$1,116	\$157,548	\$115,409	\$115,409	\$4,193	103.4	\$—	\$35,596	\$48,714
Toledo, Peoria & Western.....	239	\$371,749	\$14	\$371,763	\$22,524	\$22,524	\$24,112	48.6	\$193,175	\$173,817	\$133,735
9 mos.....	239	\$371,749	\$14	\$371,763	\$22,524	\$22,524	\$24,112	48.6	\$193,175	\$173,817	\$133,735
Union Pacific System.....	9,782	\$4,433,847	\$7,665,705	\$12,099,552	\$5,000,306	\$5,000,306	\$591,454	54.9	\$20,439,061	\$5,372,428	\$4,144,214
9 mos.....	9,782	\$4,433,847	\$7,665,705	\$12,099,552	\$5,000,306	\$5,000,306	\$591,454	54.9	\$20,439,061	\$5,372,428	\$4,144,214
Sept.....	111	\$103,391	\$1,077,346	\$1,180,737	\$12,702	\$12,702	\$31,333	78.3	\$130,953,717	\$36,690,700	\$27,782,703
Utah.....	111	\$103,391	\$1,077,346	\$1,180,737	\$12,702	\$12,702	\$31,333	80.4	\$201,387	\$114,139	\$95,151
Virginian.....	657	\$2,196,140	\$9,277	\$2,205,417	\$280,077	\$280,077	\$25,530	63.1	\$41,642	\$461,642	\$73,397
9 mos.....	657	\$2,196,140	\$9,277	\$2,205,417	\$280,077	\$280,077	\$25,530	63.1	\$41,642	\$461,642	\$73,397
Sept.....	2,393	\$5,598,392	\$8,058,699	\$13,657,091	\$1,077,785	\$1,077,785	\$149,255	65.6	\$9,600,855	\$4,506,855	\$5,414,913
Wabaab.....	2,393	\$5,598,392	\$8,058,699	\$13,657,091	\$1,077,785	\$1,077,785	\$149,255	61.5	\$27,262,043	\$10,468,466	\$6,673,086
Ann Arbor.....	294	\$431,948	\$11,341	\$443,289	\$62,234	\$62,234	\$16,395	80.0	\$92,430	\$50,654	\$49,699
9 mos.....	294	\$431,948	\$11,341	\$443,289	\$62,234	\$62,234	\$16,395	80.0	\$92,430	\$50,654	\$49,699
Sept.....	840	\$2,635,201	\$27,072	\$2,662,273	\$3,806,405	\$3,806,405	\$394,053	64.0	\$9,993,294	\$4,816,294	\$5,055,947
Western Maryland.....	840	\$2,635,201	\$27,072	\$2,662,273	\$3,806,405	\$3,806,405	\$394,053	64.0	\$9,993,294	\$4,816,294	\$5,055,947
9 mos.....	840	\$2,635,201	\$27,072	\$2,662,273	\$3,806,405	\$3,806,405	\$394,053	64.0	\$9,993,294	\$4,816,294	\$5,055,947
Western Pacific.....	1,195	\$4,194,824	\$775,200	\$4,969,024	\$86,904	\$86,904	\$90,068	55.8	\$2,261,135	\$973,935	\$772,212
9 mos.....	1,195	\$4,194,824	\$775,200	\$4,969,024	\$86,904	\$86,904	\$90,068	55.8	\$2,261,135	\$973,935	\$772,212
Sept.....	507	\$2,109,645	\$26	\$2,109,671	\$279,343	\$279,343	\$40,488	65.0	\$6,704,806	\$984,262	\$2,480,793
Wheeling & Lake Erie.....	507	\$2,109,645	\$26	\$2,109,671	\$279,343	\$279,343	\$40,488	64.5	\$6,704,806	\$984,262	\$2,480,793
9 mos.....	507	\$2,109,645	\$26	\$2,109,671	\$279,343	\$279,343	\$40,488	64.5	\$6,704,806	\$984,262	\$2,480,793

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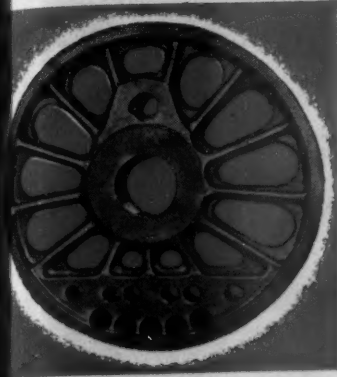
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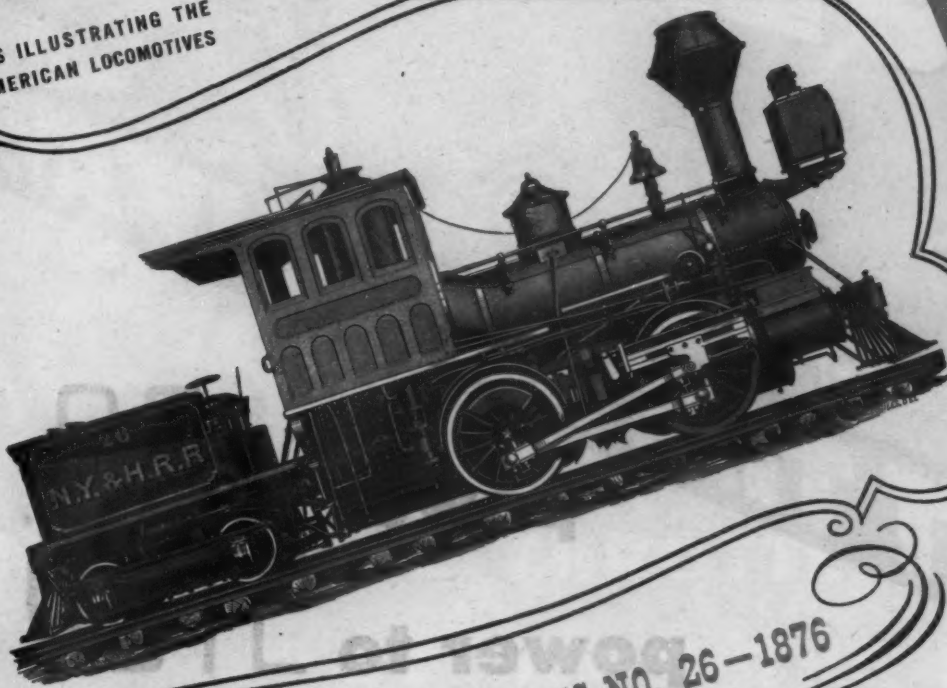


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seems to indicate a separate tender, this can be attributed to the angle at which the drawing was made, as actually the engine frame was carried through to the rear of the coal bunker.

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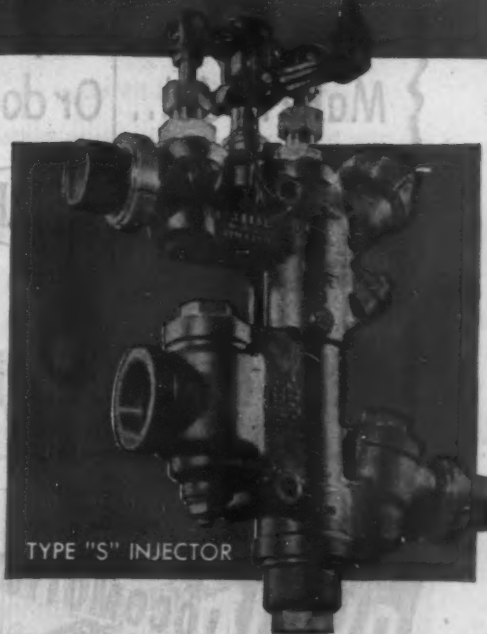
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- 18, Dump, K & J Automatic, 16-Yd., 40-Ton
- 4, Dump, Western, 20-Yd., 40 & 50-Ton
- 1, Dump, Koppel Drop Door, 20-Yd., 40-Ton
- 20, Flat, 40-Ft., 50-Ton
- 35, Gondola, Composite, 36-Ft. & 40-Ft., 40-Ton & 50-Ton
- 10, Gondola, Steel, 50-Ton, High Side
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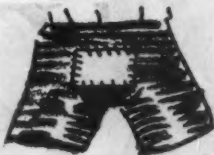
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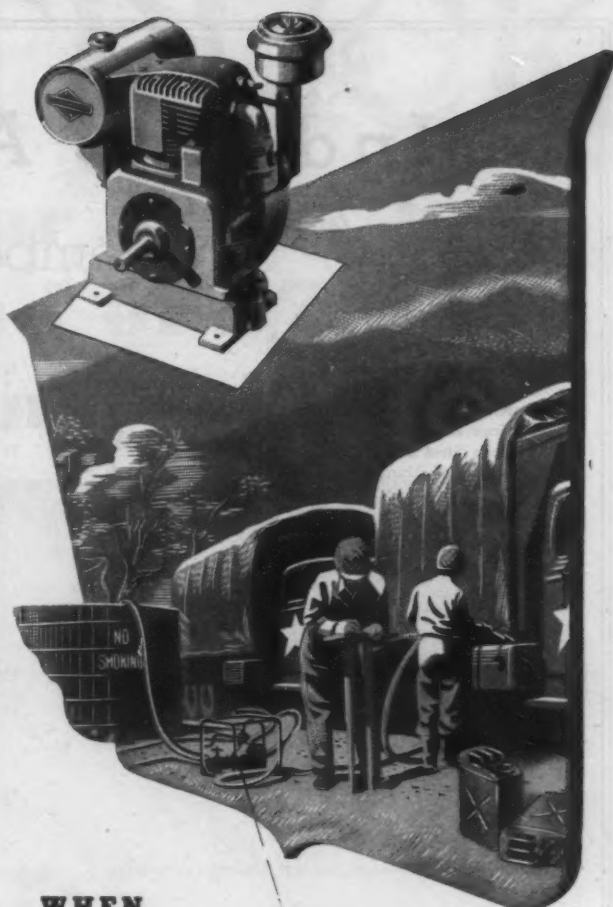
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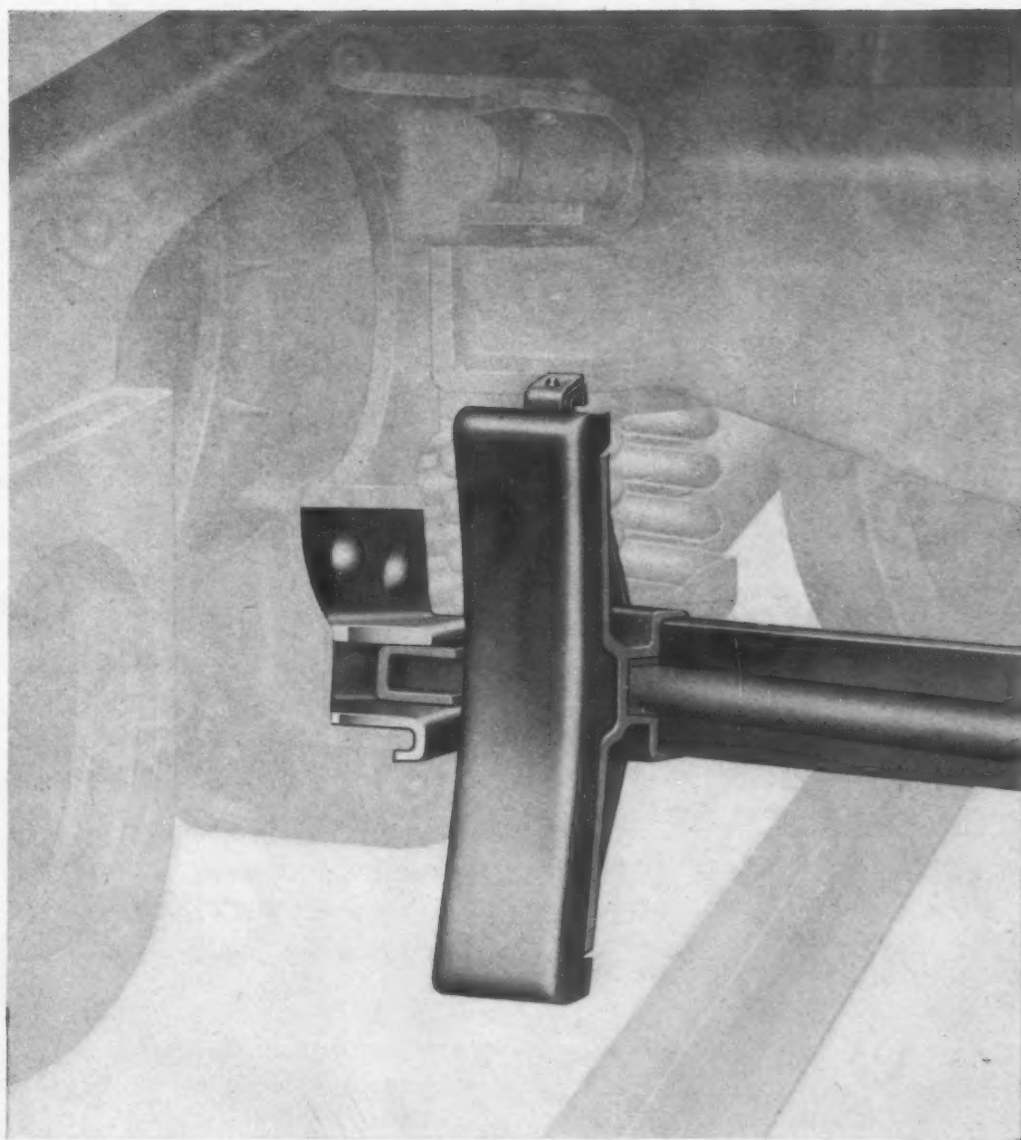
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**CINCINNATI 2, OHIO**



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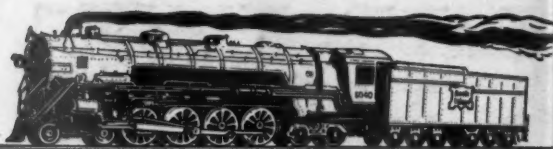
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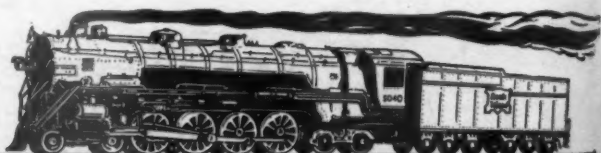


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The above has been the experience of The Rock Island Lines with their "5000 Class" locomotives, heaviest and most powerful on the road. There are 65 of these engines in service, the first of which were purchased in 1929.

Since being changed over to Timken Roller Bearings, they have shown an average monthly mileage *increase* of 4,900 miles, and now are

averaging approximately 100,000 miles per year. Maintenance cost meanwhile has declined sharply.

This information is reprinted from the April, 1944 issue of Rock Island Lines News Digest, which also contains the following statement: "The remarkable performance of these and other Rock Island steam locomotives in freight service is indicated by the fact that while total gross ton miles in 1943 were almost 33½ billion compared to a little over 19½ billion in 1939, an increase of approximately 70 per cent, the load was moved by about the same number of engines." The Timken Roller Bearing Company, Canton 6, Ohio,

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TRADE-MARK REG. U. S. PAT. OFF.  
**RAILWAY ROLLER BEARINGS**





I

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THE HISTORY OF THE

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